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A. M. A. Session CHICAGO June 12-16, 1944

Official U. S. Public Health Service Manual of Industrial Hygiene & Medical Service

The U. S. Public Health Service's Official Manual of Industrial Hygiene and Medical Service in War Industries has been specially designed to meet the numerous changed health conditions in industries converted to war purposes. It provides authoritative guidance in dealing with industrial health hazards emphasizing, in particular, methods of control and practical means of diagnosing and treating occupational diseases.

The opening section of the Manual deals with the War's influence on health, hygiene and disease in industry and includes essential facts on medical, nursing and dental services.

This is followed by a review of the compensation laws, and then by clinical descriptions of occupational diseases and conditions. There is an outstanding chapter on *occupational dermatoses.* The important subjects of *industrial fatigue* and *nutrition in industry* are stressed.

To complete the Manual, there is a timely coverage of the manpower problem, including the part of women in industry. The chapter on *Absenteeism* is particularly significant.

Prepared by the Division of Industrial Hygiene of the National Institute of Health, U. S. Public Health Service and issued under the auspices of the Committee on Industrial Medicine of the Division of Medical Sciences of the National Research Council. Edited by WILLIAM M. GAFAFER, D.Sc., Chief of the Statistical Unit of the Division of Industrial Hygiene. 508 pages, 6" x 9", illustrated. $3.00.

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WORKING CONDITIONS FOR FEMALE EMPLOYEES

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CHICAGO

The shift from peacetime to war production has increased the call for women, many whom have never worked before and others who have been engaged only in service, trade or other nonfactory jobs.

Considering the entire labor force of the United States, the employment of women has been increasing at a faster rate than that of men.[1] In March 1943 the number of women working outside their homes reached an all time peak of 15,200,000. Total male employment declined between March 1942 and March 1943 by 5 per cent, but employment of women went up 14 per cent.

In some key industries, such as aircraft, the number of women has risen from nearly zero to hundreds of thousands. In aircraft women total more than a third of the workers, in some individual plants more than half. In communications equipment 58 per cent of the workers are women, in scientific instruments 43 per cent, in ammunition plants 40 per cent, in electrical equipment 38.5 per cent and on down in varying smaller proportions in more than thirty separate important industrial categories.

Industrial management has approached the employment of women with not a little uneasiness. It is true that women have been employed for years on many light manufacturing operations, and they have excelled men in many jobs requiring patience and precision. But in those industries in which the employment of women has not been customary the change has involved a complete revision of many personnel and employment policies as well as extensive plant alterations.

The effective employment of women in industry depends in a large measure on thorough planning. This must be done well in advance of the employment of the first female production worker, for it is only through detailed planning that any program can be effectively initiated and maintained. Attention must be paid therefore to certain fundamental factors which serve as a guide for the utilization of these women on the production line in our war industries.

There are certain jobs and working conditions not suitable for women, but these are chiefly due to certain limitations of physique, biologic differences and experience.

It seems quite obvious that most of the precautions for health and safety recommended for women are equally desirable for men. Basically, poor working conditions and environments have no sex differential. Nevertheless the employment of women calls for certain refinements of procedure that seem less important for men.

It may be said that any production program, whether in wartime or peacetime, can be attained and maintained over an extended period of time only when working conditions and unhealthful environments leading to fatigue, discomfort, ill health or accidents are eliminated as far as practicable.

In order to make the entry of women in factories as easy and successful as possible, recognition and consideration must be given to certain factors and requirements for their safe, healthful and efficient employment.

WOMEN AND MACHINES [2]

On the average, women are shorter, lighter in weight and not as strong as men. This statement is trite, and it seems needless to repeat it. However, it should be kept constantly in mind when reviewing any job where consideration has to be given to replacing men with women workers.

In most cases machines have been designed and fixtures developed for the reach, strength and stature of male operators. Most assembly jobs have been developed and time and motion studied with the reach, strength and stature of male workers as factors. Now female employees make it necessary to change machine design. Therefore the complete cycle of motions necessary to operate a machine or do a certain job should be studied so that the same amount of work may be done by women without an increase in personal fatigue.

This transition from men to women workers does not involve a complete redesign of machines, tools and equipment. It does, however, require a careful study of each individual job—preferably by a qualified time and motion study man or a combination of foreman, time and motion study man, and safety engineer and industrial physician—in order that all the elements may be given careful consideration.

In making such a study, the following changes should be considered:

1. Extension of levers on machines, tools and equipment in order to produce the same results with less effort.
2. Use of lighter weight and longer wrenches to reduce the strain on the operator.
3. Suspension and counterbalancing of heavy hand tools where substitution of lighter tools is not practical.
4. Lowering of work table, or raising of floor level, to compensate for the difference in the height of men and women operators.
5. Readjustment of machine guards because women's hands are smaller than men's.
6. Positioning of material so that it will:
   (*a*) Reduce the number of body motions.
   (*b*) Eliminate need for lifting heavy objects.
   (*c*) Eliminate need for long reaching.

This paper, in a symposium on "Health of Women in Industry," is published under the auspices of the Section on Obstetrics and Gynecology.

1. Employment of Women in Wartime, Monthly Labor Review, September 1942, pp. 441-445.

2. Westinghouse Electric & Manufacturing Company, Medical Department, East Pittsburgh, Pa., 1943.

SELECTION AND TRAINING

Experience has shown that the wholesale employment of women without some caution in selection will result in high labor turnover and absenteeism. Generally speaking, the selection and training of women is often more difficult and presents greater problems than those in the employment of men. Employment tests and procedures used in the past for the employment of men are not totally suitable for the employment of women. They must be altered to fit certain considerations. It is important as a first step in any selection procedure to know the type of work for which women are needed.[3] Heavy or highly skilled work should be broken down into intermediate jobs wherever practicable. Jobs should be classified as to skill needed, health and safety hazards and physical strength required, so that personnel and medical directors may be in a better position to place the right type of woman employee in the proper job.

Women as a general rule, while lacking in mechanical experience, do not lack mechanical ability. Mechanical ability can be brought out only after proper training and experience. Initial training courses must be extremely elementary. Many women are entering factories for the first time and therefore will not be familiar with the common shop terms and tools. After careful initial training they can then be given more effective on the job training for their specific tasks.

What are the jobs in which women can be employed? This is a question, because women are daily going into jobs that never were previously performed by women. The only leading limitation appears to be the degree of physical effort required and possibly women's greater susceptibility to certain poisons such as benzene and lead. However, these factors can be controlled by early and adequate planning, such as the division and subdivision of jobs into several phases, by the use of mechanical lifting devices for reducing and eliminating physical effort and by adequate engineering and medical control for preventing and detecting occupational environmental exposures.

PROHIBITED EMPLOYMENT

Only a limited number of industrial employments are prohibited for women by legislation. Most of these prohibited employments are concentrated in the laws of a few states and many are prohibited or regulated in not more than one state.[4] Many of the states have only a single prohibition or regulation. In twenty-two states and the District of Columbia there are no laws regarding the employment of women in any specific occupation. Federal legislation concerning the employment of women in manufacturing industries is chiefly contained in the Fair Labor Standards Act and the Walsh-Healy Public Contracts Act. All the federal and state laws should be studied carefully before placement and periodically thereafter for changes.

NIGHT WORK

It can be stated that night work is not beneficial to any one regardless of sex. The human mechanism is designed for and experienced in working by day and sleeping at night. Women appear to be more affected by night work than are men. Most employed women have responsibilities outside their hours at the place of business, and, whether married or single, they bear some share in the care of the home. Outside of great emergency and absolute industrial necessity, night work for women should be restricted.[5] Furthermore, make sure that the individual is able to work the night shift. No employee should be accepted if there is a history of anemia, digestive or respiratory disease or nervous disorder.

HOURS OF WORK AND FATIGUE

Experience gained during the last war is conclusive that long hours and fatigue impede production. The person handicapped by the physical poisons produced by fatigue cannot work so rapidly or so effectively as can the person who has sufficient time for rest and recreation. The matter of hours of work and fatigue is most important in connection with the utilization of woman labor. It can well be said that the success or failure of the movement depends to a great extent on what we do with reference to these things. The disabilities to which women are liable are readily caused or accentuated by irregular hours and habits. These conditions may become chronic and render the subject unable to continue her work or prejudice her future health. Fatiguing occupations and environments slow up the worker, increase the danger of accidents, induce various forms of nervous disorders and lower the resistance of the worker. If it is at all possible there should be transference of workers on monotonous processes to avoid fatigue. While there has been a striking trend toward the shortening of working hours and the lessening of fatiguing factors, under emergency powers those benefits and standards slowly achieved are often interrupted. In many states, to meet the war production demands, the need for longer hours is met by issuing emergency permits after a careful investigation that such a need exists.[6] These have a limited time and are revocable.

Women are prohibited from working more than forty-eight hours per week in American industry. It seems that American management has felt that there is no need for longer hours and that above forty-eight hours neither the worker nor the management is benefited. The U. S. Women's Bureau has prepared recommendations in regard to the working time of women.

SEATING

Women should be seated at their work whenever practicable. However, neither continuous sitting nor standing is recommended, as both will produce fatigue. The work should be so laid out that the worker can perform her job either sitting or standing in order to allow some change in her working position from time to time. If practical, on highly repetitive and monotonous jobs the work should be so arranged that the operators must go after their work rather than have it brought to them. The seats should be of the posture type suitable for the type and nature of the work to be performed. Makeshift seat arrangements should be discouraged.

WEIGHT LIFTING

It has been recognized since women first worked that they should not be allowed to lift heavy loads or do work requiring great physical exertion if they are

3. Women's Role in War Production, Bulletin 4, U. S. Department of Labor, Women's Bureau, April 1942, vol. 9, No. 4.
4. State Labor Laws for Women, Bulletin 156, U. S. Department of Labor, Women's Bureau, 1938, pt. 1, summary.
5. Night Work for Women and Shift Rotation in War Plants, Special Bulletin 6, U. S. Department of Labor, Women's Bureau, June 1940.
6. Labor Standards for Women on War Work: The Woman Worker, U. S. Department of Labor, May 1942.

to be efficiently employed. There is a great variance of opinion relative to the safe maximum lifting load for women. State regulations are meager on this subject and in addition show great variance. In England it has been reported that women are allowed to lift a load equivalent to one-third their own weight.

The conditions under which the lifting is to be done must be known before any safe limit can be set. The chief factors to consider are:

(*a*) The ratio of load to body weight.
(*b*) The number of loads lifted.
(*c*) The size and shape of the load.
(*d*) Distance load is to be carried.
(*e*) Period of sustaining lifting.
(*f*) The levels of lifting.
(*g*) Degree of rotation of the body.
(*h*) Changes of level during carrying.
(*i*) Method of lifting.
(*j*) Physical condition and size of the woman.

The U. S. Women's Bureau [7] has recommended that lifting loads be limited to 35 per cent of the body weight, however, this load appears to be excessive for a 90 to 100 pound girl. The best procedure to follow would be to prevent lifting wherever practical and to limit it to a minimum wherever it is necessary.

The safest method to employ regarding lifting would be as follows:

1. The plant physician should be made responsible for assigning any woman to a lifting job in excess of 25 pounds.

2. Every job requiring lifting should be carefully analyzed to provide and develop mechanical lifting and conveying measures such as hoists, cranes and tiering trucks. When lifting is necessary the work should be arranged so that the worker does not have to stack above her height.

3. Where lifting must be performed, the women should be properly instructed in lifting methods to avoid strain. For example, to avoid undue abdominal strain the feet should be kept close to the object and a narrow stance should be employed in which the feet are from 8 to 12 inches apart. A good procedure to follow is to bend the knees, keep the shoulders back and lift mainly with the leg muscles and not the back. Many back injuries are caused by lifting with the back.

4. Teach workers the safe and best way to carry weights. There are generally four methods for carrying loads. These are shoulder carriage, tray carriage, side carriage and hip carriage. This frees the lower limbs and does not result in fixation of the chest. This is particularly advantageous for the heavier loads that must be carried the longer distances.

Tray carriage (carrying in front) is at times best employed when carrying loads for short distances. However, fatigue of the arms and wrists is pronounced if this method is employed continuously.

Side carriage, that is carrying bundles at the sides, has the advantage of not disturbing body balance and not interfering with freedom of locomotion. However, the hands and arms also become decidedly fatigued if this method is employed for long continuous periods.

Hip carriage necessitates bending the body to the side to compensate for the lateral vector of the load. This carrying method interferes with normal walking and natural breathing. It is also tiring because of the rubbing of the hip and arm fatigue.

WORK CLOTHES AND PERSONAL PROTECTIVE EQUIPMENT

The longer women are employed the more it becomes apparent that work clothes should be provided for their safe employment. This should include suitable uniforms, caps, gloves and shoes. The type of clothing to be provided depends on the type and nature of work to be performed.[8] However, there are certain basic requirements of work clothes, for example:

1. The women should be consulted as to the type and design which they most like, and as to whether or not the proposed design is comfortable and practical.

2. The clothing should not be loose fitting enough to be caught in moving machinery.

3. The material should be attractive, durable and not readily inflammable, and it should launder easily. Bright colors have been reported as meeting with women's fancy.

4. The material should not collect dust and dirt easily.

5. Consideration should be given to the temperature of the workroom.

No wide skirts, loose sleeves, flowing ties or frills of any type should be allowed about any moving object. Slacks with tucked in blouses or coveralls have been found effective and can be made attractive. Neither slacks nor sleeves should have cuffs. Tight fitting work clothes may irritate, cause strain and result in fatigue. On the other hand, loose clothes may catch on protruding or moving equipment. Long sleeves rolled up are not desired, for the loose roll caught in a machine is more resistant to tearing when caught, and the result may be a serious injury. Outside pockets are not favored, but if necessary they can be a flat seamed or flat hip pocket.

If there is danger of fire, cotton material is preferable instead of rayon or other inflammable cellulose fabrics, for work clothes. Lightly starched fabrics are generally more fire resistant than those that have not been so treated.

Long hair is a most serious accident problem. Severe accidents have occurred about machines when hair has been caught in a moving part. Static electricity can draw hair into a moving machine despite guards. Therefore, caps with hair nets or tight fitting turbans should be worn. It is felt that a stiff hat (light of weight and fitting loosely) is preferable about moving machinery. This hat should be so designed that there is little danger of its being caught in the machine. In jobs where toxic dusts emanate, caps become of increased importance. In radium dial painting, for example, despite precautions, such as the handling of only a grain of powder at a time and mechanical ventilation, radioactive dust can be detected in the hair of dial painters with an ultraviolet lamp unless head coverings are worn.

Jewelry has no place in the factory. Many serious accidents have occurred from loose hanging jewelry. One does not need a vivid imagination to picture the horrible consequences of a necklace or bracelet being caught in a moving part of a machine. It has become a rule in many plants to prohibit the wearing of bracelets, earrings, large rings, wrist watches and all female decorative equipment.

Safety shoes are also important for the safe and efficient employment of women. Women should be required to wear low heeled, comfortable shoes. The high heel, toeless shoe should be prohibited. Not only do uncomfortable shoes cause undue fatigue, but they can also be a hazard. One of the commonest accidents among women is tripping and falling. In this source of accidents high heels, worn shoes, slippers or other improper footwear are major causative factors. In addition, open toe shoes should be prohibited. Closed

7. Lifting Heavy Weights in Defense Industries, Special Bulletin 2, U. S. Department of Labor, Women's Bureau, February 1941.

8. Safety Clothing for Women in Industry, Special Bulletin 3, U. S. Department of Labor, Women's Bureau, 1941.

toe shoes prevent injuries from stubbed toes and the entrance of small particles of metal and other materials into the toes and the danger of toe infections. Safety shoes have not entirely met with the approval of women. However, where they have been made light and attractive, acceptance has been generally found.

SANITATION AND WELFARE MEASURES

Probably no single group of measures is more indicative of management's appreciation of the health, safety and comfort of its employees than the extent and adequacy of sanitation and welfare facilities. Employees react more favorably to these measures than to any other environmental change. Particularly is this more true of women than of men.

Much of the emotional adjustment of female employees can be aided by adequate and suitable sanitation and welfare measures, and the high labor turnover, which is evident during the first part of the employment period, can be reduced by such facilities. Few manufacturing plants had adequate facilities for women prior to the present war, and therefore the major physical or structure changes in the plant will probably be in providing these facilities. The extent and type of measures normally provided for men are generally inadequate for women.

There are many sources of information to assist in planning sanitation facilities for women. State and city health departments, the U. S. Public Health Service and the U. S. Women's Bureau all have excellent free literature on good sanitation practice. One of the best standards to follow is the "Safety Code for Industrial Sanitation in Manufacturing Establishments" of the American Standards Association.[9] These standards are the most authoritative and were prepared in cooperation with the U. S. Public Health Service.

In providing toilet facilities for women the following are some of the minimum essentials:

1. It is necessary to provide separate toilets for men and women.
2. The U. S. Women's Bureau recommends that toilets for women be supplied in the ratio of one for each fifteen women.
3. Toilet rooms should be provided with adequate washing facilities and should be equipped with sanitary napkins and suitable dispensers.
4. Privacy demands that each toilet unit be enclosed and have a door provided with a fastener.
5. The minimum floor space allotted for toilet facilities should be 16 square feet for each toilet.
6. The construction and maintenance of toilet fixtures should comply with the state or city building and plumbing codes.
7. In the interest of sanitation, it is important that walls and floors of toilet rooms be of material as nearly as possible nonabsorbent.

WASHING FACILITIES [10]

Women are most particular about skin hygiene, and therefore this fact should be considered in providing wash rooms. Managements that go beyond the minimum city or state requirements will find it well worth while. Wash rooms should be equipped with soap, hand lotions, skin creams in suitable dispensing units, individual towels, cleaning tissue and waste receptacles. Mirrors should be provided over a narrow glass shelf. The room should be well painted, illuminated, ventilated and heated. Good skin hygiene is a basic requirement for the prevention of dermatitis.

The following minimum practices should be instituted:

1. Washing facilities may be of the individual bowl, trough or wash fountain type. Troughs or wash fountains have the advantages of being economical to install and economical of space.
2. At least one wash basin with adequate water supply should be provided for every ten employees or portion thereof up to one hundred persons, and one wash basin for each additional fifteen workers or portion thereof. Twenty-four inches of sink with individual faucet may be considered equal to one basin. If the women are exposed to dermatitis producers, the ratio should be one wash basin for each five workers.
3. Showers may be necessary if women are placed on jobs in which the body becomes covered with grease, dust, grime and perspiration. If these are necessary they should be installed in the ratio of one per ten workers.

REST PERIODS

The benefits of rest periods have not been fully appreciated by many manufacturing establishments despite the fact that the introduction of such periods in England showed that in the majority of cases they led to an appreciable improvement in output, in spite of the loss of working time. It was found that a five to ten minute rest in the middle of the work spell increased output by 5 to 10 per cent.

Rest periods should be provided for all women workers, particularly those engaged in monotonous and repetitive work. The time allotted for such periods is best determined by individual plant study. The general tendency is to allow ten minutes in the midmorning and midafternoon, although in some very monotonous jobs five minutes after each hour has been provided.

Rest periods should not be made to serve for all necessary health and safety measures. They cannot in themselves offset fatigue but are only one of the several measures for its control.

LUNCH ROOMS AND LUNCH PERIODS

Eating at work tables or in workrooms is a poor habit and should be discouraged. Not only is this practice poor hygiene, but, in the handling of toxic materials, a real danger of poisoning would exist from food contamination.

A separate lunch room should be provided, and provision should be made to supply hot lunches. Every effort should be made to educate women in good nutrition. The excessive use of carbonated beverages should be discouraged. Lunch rooms should be clean, attractive and comfortable. Facilities for obtaining and eating a good lunch in comfort will reduce absenteeism and also do much in the reduction of fatigue. A good industrial lunch room is another of the factors in attracting women to a plant and in maintaining a low labor turnover.

As important as a good lunch room is the provision of an adequate lunch period. The U. S. Women's Bureau [11] states briefly in regard to lunch period:

A lunch period is too short if it does not give the worker time to leave the workroom, wash and eat a well balanced lunch and have a few minutes for leisure afterward.

Workers handling harmful substances or exposed to harmful fumes or dusts should be given extra time before lunch for thorough washing. In some cases time for changing work clothes may be necessary to prevent serious cases of poisoning.

9. American Standards Association, 29 West 39th Street, New York.
10. Washing and Toilet Facilities for Women in Industry, Special Bulletin 4, U. S. Department of Labor, Women's Bureau, April 1942.
11. Women's Effective War Work Requires Time for Meals and Rest, Special Bulletin 5, U. S. Department of Labor, Women's Bureau, May 1942.

If the lunch room is inadequate to serve the expanding force with dispatch, or if it is distant from the workroom, additional time should be allowed, or provision made for carts with hot food to serve lunches at convenient points.

TRANSPORTATION

Transportation is also a matter of concern. Particularly is this problem important on the late afternoon and night shifts. Many women are afraid to leave or come to work at about midnight. In the case of young girls, parents may even prohibit them from work at this hour because of danger of molestation. Problems will likewise arise among those reporting for work at 7 a. m. or earlier.

No one solution can fit all transportation problems. Each is dependent on several factors, such as location of plant, type of transportation systems available and their schedules, and home location of employees. Some of the methods by which plants have met, or at least partially met, their transportation difficulties are:

1. Concentrated hiring from certain areas with special bus service to those areas.
2. Special bus service to and from main transportation terminals.
3. Employment on night and late afternoon shifts of those women with best transportation facilities.
4. Establishment of group riding.

HOUSING

As more and more women enter industry and particularly in large plants in rural areas, the housing problem will become acute.[12] It may be necessary in some areas to construct special dormitories for women. In any case the plant personnel departments should assist employees in securing satisfactory housing arrangements by securing a list of available rooms or apartments. In addtion they should work with community agencies for housing and should stimulate plant executives to work with community officials in securing housing assistance from federal agencies.

Two of the first measures to meet the housing problems are to secure as much of the new personnel from present employee-families and to request present workers to provide housing for as many new workers as possible. Housing that is secured should be suitable and comfortable, for poor housing may develop many additional problems. All types of housing for women war workers should conform to standards essential for safety, security, health, decency, adequacy, privacy, cleanliness and comfort. Living quarters should be conveniently located in regard to workplaces and recreation facilities and be in pleasant surroundings.

NONOCCUPATION ILLNESS FACTORS

Illnesses of nonoccupational origin is by far the major type of sickness among any group of workers, and, in the case of women, this fact is even more striking.[13] If efficient and continued production is to be obtained from women, it is these so-called nonoccupational diseases that must be vigorously attacked. It is in the control of these diseases that management will obtain the greatest economic benefits from its industrial health program. Therefore in the interest of both management and labor, health programs must transcend occupational disease control and include a broad program of general health maintenance.

Present experience in England presents a warning to public and industrial health workers that must not be overlooked. This is the present sharp increase in tuberculosis, which has been especially large among women in general and particularly among young women. The cause for this increase in the tuberculosis rate is the most difficult health problem today confronting the health authorities in England. It is felt that overcrowding with increased contact, nutrition, worry and many other factors are all contributory, but as yet the one chief factor has defied recognition, as well as the reason for the predominance among young women. While it is not felt that the problems will approach the severity of those in England, we must nevertheless recognize all potential problems and guard against them.

There are certain factors and special physiologic conditions in the production of general illness among women which are of great importance in their efficient and healthful employment. These factors of general illness make the problem of good health maintenance greater in the case of women than in the case of men.

OCCUPATIONAL ILLNESS FACTORS

The true extent to which sex differences apply to occupational illness per se is not clear. Lead and benzene do appear to exert a greater influence on women, and women apparently are more susceptible to poisoning from these compounds. Dr. Alice Hamilton[14] has stated that young women seem to be particularly susceptible to poisons affecting the nervous system. It has been generally felt that women are more susceptible than men to poisoning from trinitrotoluene, mercury, arsenic and carbon disulfide.[15] This belief has not as yet been substantiated by sufficient clinical data. It has also been stated that lead and carbon tetrachloride are particularly dangerous to women during the antepartum and postpartum periods. However, there are many other materials, in fact, almost any industrial atmospheric contaminant that may exert an injurious effect on the blood forming organs, the liver or the kidneys which may be deleterious to women during these periods. It should be kept in mind that men also are adversely affected by the aforementioned materials. Simply prohibiting women from working with these materials will not solve the problem if men are similarly exposed. Every effort should be made to protect all workers from hazardous materials. If an environment is safe, it is equally safe for men and for women.

Dermatitis will in all probability become the major occupational disease among women during war periods, especially in the early states of their employment.[16] Women have always exerted great care of their skin. Rarely have they been exposed to the primary skin irritants which are found in industry. As a result of this skin care and lack of previous exposure the skin of women is generally more easily sensitized than that of men.

12. Anderson, Mary: Some Health Aspects of Putting Women to Work in War Industries, in proceedings of Seventh Annual Meeting of Industrial Hygiene Foundation of America, Inc., Pittsburgh, Nov. 11 and 12, 1942, pp. 165-169.

13. Frequency of Disability Morbidity by Case and Duration Among Male and Female Industrial Workers During 1940, and by Cause Among Males During the First Quarter of 1941, Reprint 2314, U. S. Treasury Department, Public Health Service, 1941.

14. Hamilton, Alice: Industrial Poisons in the United States, New York, Macmillan Company, 1925.

15. Effective Industrial Use of Women in the Defense Program, Special Bulletin 1, U. S. Department of Labor, Women's Bureau, 1940.

16. Carlisle, J. M.: The Health Problem of Women in Industry, in Proceedings of Seventh Annual Meeting of Industrial Hygiene Foundation of America, Inc., Pittsburgh, Nov. 11 and 12, 1942, pp. 170-175.

Care should be exercised in the placement of women, especially light skinned women, on jobs employing dermatitis producers. Many industrial maladies are the result of a specific exposure inherent in a certain process or operation. Dermatitis, on the other hand, occurs in many industries, operations and processes and may result from a great variety of manufacturing materials. The largest number of dermatitis cases in the past have resulted from the use of solvents. There are other occupational diseases which have occurred among women workers which are also prevalent among male workers. However, there is quite apt to be a greater frequency of these diseases among females as women become more deeply absorbed into our war production program.

Synovitis and neuritis of the hand, wrist and arm, and other diseases resulting from repetitive activity may become prevalent among women, owing to the wide use in industry of portable hand tools of the pneumatic and electrical types.[17] This may represent a very important problem at present, for never before have portable hand tools achieved the wide use that they have today in industry.

Poisoning by lead and organic solvents must be rigidly guarded against during war periods. Because of the wide use of these materials, their high toxicity and of the displacement of men in the jobs employing these materials, they should receive added vigilance. During emergency periods, such as the present, there is a tendency to revert back to the more hazardous materials because of the fact that generally they do an excellent job, and the less toxic ones are more difficult to obtain. For example, benzene is now seeing wider use than previously because of the difficulty of obtaining toluene and xylene. War production requires great vigilance on the part of industrial health workers, for our production planners generally relax health precautions.

SAFETY FACTORS—ACCIDENTS

The accident problem associated with the employment of women in industry has received too little attention in the past. Statistics do not provide sufficient information. It does seem reasonable to state that, when women are carefully selected for employment, sufficiently trained in safety and for the job and not subjected to great physical exertion, their safety record should be as good as if not better than that of men, provided adequate machine guards and other safety measures are instituted. These guards and measures must be specific for women. Women are inherently more careful than men, and this should be of value in safety. Speed does not produce accidents but haste does; speed and safety can go together.

Accident statistics have shown that, in peacetime, accidents are fewer to women than to men. This does not prove that women are more safety conscious or that they have received better safety training but rather that women are not subjected to as many or as great accident hazards as men. However, even in peacetime there are a large number of accidents among women. The U. S. Women's Bureau[18] made a detailed study of the accident reports of the states of Indiana and Pennsylvania, which contained 6,000 accidents that had occurred to women in one year. Injury to the upper extremities were responsible for nearly two thirds of the Indiana accidents and a little more than one half of those in Pennsylvania. Machinery is probably the chief source of accidents to women. Those machines at which most of the accidents were found to occur were punch presses, power sewing machines, drill presses and cutting machines. All these machines can be equipped with proper guards which would have prevented any accidents.

Next to machines, falls are a major source of accidents to women. The U. S. Women's Bureau in analyzing the accident statistics of eight states found from well over one fifth to one third of all injuries to women were due to falls. It was also found that falls resulted in longer periods of disability than do other types of accidents to women.

How the changing occupational picture is affecting injuries to women is shown in recent Wisconsin figures. Reportable injuries to women increased from 147 in December 1941, or 5.8 per cent of all injury cases, to 209 in January 1942 and 240, or 9.2 per cent of the total, in March. As women constitute the largest group of inexperienced workers entering industry, great care must be exercised to insure their safe employment.[19]

It has been said that young girls have shown the higher frequency and the women over 40 the lower frequency. However, there is no definite proof of this as a general finding. In England, on the contrary, the older women present the higher accident rate.

One of the most striking features of America's economic development has been the increasing number of women income earners. During the last half century America has created many new kinds of jobs, and many of them have been for women. New inventions, mechanization of industry, the division and subdivision of labor tasks has made it possible for these women to enter the shop and factory. It is idle, indeed, to speak of the exclusion of women from the occupations. Women are in industry to stay.

1800 Fillmore Street.

ABSTRACT OF DISCUSSION

DR. JAMES M. CARLISLE, Rahway, N. J.: For the past year or more I have been carrying out the principles laid down in Dr. Kronenberg's paper, and labor turnover in our plant as well as absentee and accident records among women have been unexpectedly low. Women differ from men in their emotional makeup, and many women come into industrial plants who have never before worked outside the home or under any sort of discipline. They often bring with them numerous small cares pertaining to the home, as well as emotional upsets, which men are better trained to put aside while on the job. We have found the full time services of a woman's counselor helpful. Understanding feminine needs, she is often able to settle personal problems that might be obscure to the masculine mind but are nonetheless important to the worker's nervous equilibrium. Another factor that seems to help is having a woman doctor on the medical staff. Her presence is reassuring to women workers, who become less reluctant to report illnesses and accident or to undergo a physical examination. The maintenance of morale is of particular importance in keeping women on the job. Many who have come into war work on a wave of patriotism find the job losing its original glamor as time goes on and becoming mere drudgery. Then morale breaks down and various excuses are made for quitting. This is most likely to happen if the work is somewhat beyond the worker's strength and thus produces a sense of inadequacy or failure. For this reason I should like to stress the importance of job analysis.

17. Mettert, M.: Occurrence and Prevention of Occupational Diseases Among Women, 1935-1938, Bulletin 184, U. S. Department of Labor, Women's Bureau, 1941.

18. Industrial Injuries to Women and Men, 1932-1934, U. S. Department of Labor, Women's Bureau, 1938.

19. Women's Wartime Occupational Hazards, Indust. Med. **12**: 486-487 (July) 1943.

which Dr. Kronenberg has already touched on. I refer to the analysis of a specific job with the object of breaking it down into operations that can easily be done by women and those that require a man's strength. This has been done successfully in our plant, with the result that the women suffer less fatigue and at the same time acquire a sense of proficiency and effectiveness. This appears to me to be one of the most important factors in securing maximum production from the woman worker and in keeping her on the job. We have not found women at our work stations in the manufacture of medicinal chemicals unduly susceptible to skin irritations. In spite of the greater area of skin usually exposed by women, our most severe and widespread cases continue to occur among men. It may be that our preventive measures together with the greater care women expend on cleaning and conditioning their skin is responsible for this favorable result. Back injuries have not been an outstanding problem, chiefly because men still are given most if not all of the heavy lifting jobs in our plant. Strains of the wrist and forearm, or tenosynovitis in that region have, however, been a fairly frequent disorder. These are not new, however, as they have been seen not infrequently in typists and clerks who do light but highly repetitive work with the hands. One type of exposure that women tolerate poorly is that of unpleasant odors. They complain of these much sooner than men do and are more frequently nauseated or made actually ill by them. For example, we have found it impossible to keep women at work on a process involving exposure to ethylene dichloride (dichlorethane). Dr. Kronenberg makes no mention of the strictly gynecologic and obstetric complications which may incapacitate women in industry. These have not proved as great a cause of inefficiency and absenteeism as we had at first feared, and it has been our observation that dysmenorrhea is less of a problem among those doing active physical work than it is in the sedentary clerical staff. Menopausal symptoms have been of minor consequence.

ANNA M. BAETJER, Sc.D., Baltimore: There is no evidence that either the physical or the chemical quality of the air, such as the temperature or humidity, toxic dusts, gases and fumes or the sanitary conditions of a plant affect the health or working efficiency of normal women differently from men. In spite of the statements in the literature that women are more susceptible to industrial toxic substances, there is no sound evidence at present to support this view except in cases of pregnancy. As Dr. Kronenberg has pointed out, "if an environment is safe it is equally safe for men and women" and vice versa. On the other hand, certain working conditions suitable for women differ from those for men, owing to several physiologic and social factors. First, since the physical size and strength of women are less than those of men, adjustments in machinery, in protective equipment and in the size and weight of loads are required. Second, because of the lack of experience and training of women in factory work, more care is necessary for the placement, training and supervision of women. Third, because of certain social and economic factors, such as household responsibilities and the care of children and the aged, women often work many hours each day outside the plant and may worry about these responsibilities while in the plant. These factors are largely responsible for the fatigue of women employees and are the principal reason why shorter hours, proper lunch and rest periods and less night work are desirable for women. Fourth, pregnancy and, to a much less extent, dysmenorrhea and menopausal changes make some adjustments in working conditions necessary. Pregnant women must be properly placed and supervised, and the working conditions must be arranged to prevent toxic exposures or fatigue. Lastly, although women have a lower mortality rate than men they have a higher morbidity rate, which manifests itself in industry by greater sick absenteeism for the common nonoccupational diseases. The added home responsibilities carried by women probably contribute to this. Greater attention, therefore, must be paid to all factors in the conditions of work which tend to lower resistance to disease. The problems presented by the employment of women cannot be wholly solved by provision of optimum working conditions, but social, economic and other factors also must be considered.

HEALTH MAINTENANCE PROGRAM FOR WOMEN IN INDUSTRY

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That the field of industrial medicine has become more and more that of preventive medicine is manifested by the reports of some of our largest industries. These reports show that year after year the amount of lost time due to occupational causes has become less and less, while that of nonoccupational illness and accident continues almost unabated. In fact, one large industry employing over 300,000 men and women reports that approximately 96 per cent of all lost time from illness and accident arose from nonoccupational sources. It is interesting to note that Lynch's [1] study of 16,648 cases of lost time from illness and accident resulted in almost identical statistics: "Sickness 86 per cent, nonoccupational accidents 10 per cent, occupational accidents 4 per cent." He concludes that, if many of these lost man-hours are to be salvaged, the major problems concerned are not those of safety measures within the plant, important as those are.

With hundreds of thousands of women entering industry for the first time, this problem of public health reaches major importance when the future health of the nation is considered. It is well, then, to discuss the various relationships between the industrial physician, the private practitioner and local, state and national health agencies when any health maintenance program for women in industry is to be outlined, for it is a problem of public health in a greater measure than it is an industrial problem.

What part should the industrial medical department play in this consideration and why should health maintenance programs be given more emphasis than ever before, now that women have entered the front line trenches in the production of war materials? Selby [2] reports that "In a study covering 104 different industrial units in 36 states (1941) sick absenteeism rates for female employees averaged 320 per thousand per year with an average loss of forty-seven days. The male absenteeism rate was but 89 per thousand per year with an average loss of thirty-one days. Disability rates from respiratory infections are more than double those in males, as are those for digestive diseases. Nervous disturbances were six and a half times higher in women than in men. Pregnancy causes an absenteeism rate of 73 per thousand."

Gafafer,[3] in a study covering a five year period, found that in disabilities lasting eight consecutive calendar days or longer the frequency rate was 68 per cent higher among female employees.

We may conclude that health maintenance programs for women in industry are important for the following reasons:

1. A much larger sick absenteeism is experienced among women workers.

2. Nutritional and digestive disturbances, loss of weight and so on are more frequently problems.

This paper, in a symposium on "Health of Women in Industry," is published under the auspices of the Section on Obstetrics and Gynecology.

1. Lynch, D. L.: New England J. Med. **227:** 209 (Aug. 6) 1942.
2. Selby, C. D.: Why Do Employees Stay Away from Work and What Can We Do About It? read at the Congress on Industrial Health, Chicago, Jan. 13, 1943.
3. Gafafer, W. M.: Pub. Health Rep. **58:** 1848 (Sept. 12) 1941.

3. Greater susceptibility to excessive fatigue due to differences in physical structure.

4. Higher tuberculosis rate.

5. Specific problems of women workers: dysmenorrhea, the menopause and pregnancy.

6. Emotional adjustment to an industrial environment more difficult than in male workers.

The part that the industrial medical department is to play in this problem must be definitely outlined and strictly followed if it is to discharge satisfactorily its duty both to industry and to the community.

Specifically outlined, the health maintenance program for the industrial medical department serving women in industry should be divided into three distinct activities:

I. Study of the new employee.

II. Constant checking of the health and the working environment of the established employee.

III. Measures employed to lessen lost time, once sickness appears.

I. STUDY OF THE NEW EMPLOYEE

(*a*) *Preemployment Physical Examinations.*—These examinations for women employees should be a routine procedure. No health maintenance program is possible without an accurate knowledge of the state of health of each individual employee. Prevention is the foundation of any successful health maintenance program. Without such an examination how can preventive measures be instituted in any individual case?

Tuberculosis, for example, is more prevalent among young women than men. The National Tuberculosis Association[4] reports that 65 per cent more young women than men die of tuberculosis between the ages of 15 and 25. It is of paramount importance that the active case be recognized and reported to the family physician, the local health department or the tuberculosis association. Employees with healed tuberculosis may be placed at work under observation and reexamined frequently enough to satisfy the industrial physician that employment is not detrimental to their health.

In the case of tuberculosis, the preemployment physical examination serves the employee, the employer and the community. This also is true of syphilis and of cardiorenal, vascular and other diseases.

(*b*) *Probationary Period.*—1. Observation of Health and Dietary Habits: Observation of health and dietary habits during the probationary period is one of the most important phases in any plan for maintaining physical fitness. An industrial environment is a new experience to most of our female employees. Not only must they be taught safe working habits but the significance of their part in proper hygiene must be given due emphasis. Here close cooperation between supervision and the industrial medical department is imperative. Signs of excessive fatigue, loss of weight, overanxiety and frequent absenteeism must be brought to the attention of the industrial physician. Correction of bad health and dietary habits during this period go far in lessening lost time from sickness.

That dietary deficiencies result in excessive fatigue, lowered efficiency, eye strain, increased accident rate and illness is well understood. The studies of the Committee on Nutrition of the National Research Council[5] and the reports of numerous individual writers[6] have stimulated the industrial physician to insist on improved facilities for properly feeding the industrial wartime worker. Further, it has been realized that, if any definite improvement in eating habits is to be experienced, education must be carried into the homes of these workers that properly balanced lunches may be prepared for those not having the advantages of plant cafeterias. With the disability rates from digestive disturbances in women double that of the male worker, attention to this problem becomes one of major importance.

2. Emotional Adjustment: One of the most neglected phases of health maintenance programs in industry is that which might be termed "emotional adjustment." This is particularly important at present when we realize that the majority of women are entering the war industries with little knowledge of their new environment. Coming from the home, farm or schoolroom, many have never experienced the requirements of mass cooperation on the production line, the pressure of meeting the hourly or daily schedule, the necessary conformity to specific rules of standardization, of work efficiency, the monotony of repetitive operations. Combined with this, many women have the responsibilities of young children at home, the constant abstraction that results from husbands, brothers, sons and fiancés in the armed forces. It is no wonder that some programs designed to aid in this problem of increased psychoneurosis and maladjustment now become one of first importance to the industrial medical department. Just how this problem is to be approached is controversial. It is quite obvious that the employment by industrial management of competent psychiatrists is out of the question. They just are not available. Unquestionably the medical director has an added task—the development of a psychiatric service. This is logical, as he has had the opportunity to build confidence among employees who have consulted him often concerning medical ills. Giberson[7] has stated that "An effective program can be started with the medical director's present equipment for: 1. He can trace the emotional complications which come with every injury and illness. 2. He can listen. 3. He can diagnose the industrial trouble spots. 4. He can spot the accident prone. 5. He can recognize the obvious maladjusted types. 6. He can help prevent maladjustment by exercising actively his advisory function. 7. Finally, he can conserve manpower and uphold morale through fighting to secure medical immunity for the emotionally ill."

With the ever increasing responsibilities of the industrial medical director resulting from mass employment of women, several large industries have sought aid in this problem by appointing a girls' counselor and establishing a matron service. Ideally the girls' counselor should have had psychiatric training. Usually she has

4. Tuberculosis Abstracts, New York, National Tuberculosis Association, July 1942.

5. The Food and Nutrition of Industrial Workers in War Time, Reprint 110, National Research Council, April 1942.

6. Goodhart, Robert S.: National Nutrition Program in Industry, J. A. M. A. **121:** 823 (March 13) 1943. Bing, Franklin C.: Criteria for the Evaluation of Nutrition Experience in Industry, ibid. **121:** 813 (March 13) 1943. Cowgill, George R.: Current Nutritional Activity in Industry, ibid. **121:** 817 and 868 (March 13) 1943. Fishbein, Morris: Can We Eat Our Way to Health? read at the Congress on Industrial Health, Chicago, Jan. 13, 1943. Selling, Lowell S.: Psychology and Industrial Nutrition Programs, Indust. Med. **12:** 69 (Feb.) 1943. Jolliffe, Norman: Nutrition, in Handbook on Public Health, New York, Harper & Brothers, 1942. Jolliffe, Norman; McLester, J. S., and Sherman, H. C.: The Prevalence of Malnutrition, J. A. M. A. **118:** 944 (March 21) 1942. Sievers, B. F.: Nutrition in Industry: Manual of Industrial Hygiene, Philadelphia, W. B. Saunders Company, 1943.

7. Giberson, Lydia G.: Manual of Industrial Hygiene and Medical Service in War Industries, Philadelphia, W. B. Saunders Company, 1943.

been chosen from the nursing staff of the industrial medical department because of her intimate knowledge of the working environment of the plant and because of her ability to inspire the confidence of the distressed employee.

When the medical director or girls' counselor recognizes that the employee is suffering from frank psychosis or organic neurologic conditions, his duty is discharged when he has placed these employees in the hands of competent specialists in those fields. However, as Giberson [8] has stated, "The source of most of the misery in industry results from psychoneurosis and frank maladjustments. The attitude of inferiority, chronic fault finding, overdependence, day dreaming, worrying, chronic nervousness and excessive fatigue are symptoms detrimental to business efficiency and human happiness. Maladjustments may be due to personality clashes, to family tensions, to malnutrition and to clearly recognized crises which appear in sequence in the life of the individual worker."

It is in this group that the work of the industrial physician and girls' counselor takes an important place in any health maintenance program.

Where large numbers of women are employed, the influence of the girls' counselor should be supplemented and a matron's service instituted. Carefully chosen older women are placed out in the factory where they are in constant contact with the employees. It becomes their duty to know every girl in their department. Each matron soon grows to be a recognized friend—some one to whom the women can talk. It is the matron who first notices early signs of anxiety, chronic nervousness, excessive fatigue or illness, and it is then her duty to refer the employee to the medical department, where she may be referred to the girls' counselor if the condition is one of maladjustment. Naturally this phase of health maintenance is not confined solely to the probationary period. However, it is during this formative period that the most benefit can be derived from such a function. The counselor and matron service has proved to be of far reaching benefit and a necessary component part of any medical department serving women in industry.

3. Recreation: That many of our women war workers are not using the hours away from work for diverting or restful recreation has given the industrial medical departments cause for considerable concern. Much short term sick absenteeism has been the result.

It is not the duty of the industrial physician always to suggest how these valuable hours should be spent, but it is his responsibility to investigate repeated absences and impress on the employee the necessity of restful recreation. The problem of excessive fatigue does not end at the factory gate.

II. CHECKING THE HEALTH OF THE ESTABLISHED EMPLOYEE

(*a*) *Establishment of the Individual Health Record.*—Johnson [9] has brought to our notice the information that "12 to 15 per cent of employees cause 55 to 60 per cent of the time lost by sickness. This small group is sickness prone and should be the choice for concerted attention along prevention lines."

Legge [10] is of the opinion that "the plant dispensary is the ideal laboratory to study patients who seek advice for trivial complaints. This provides the opportunity to record and observe early symptoms, develop case reports, locate hazards and prevent morbidity."

The establishment of an individual health record draws the attention of the industrial physician to both of these groups. Further, health conditions in various departments of the plant may be compared and, finally, the overall problem of sick absenteeism may be intelligently studied.

(*b*) *Periodic Physical Examinations.*—The conducting of periodic physical examinations of those in apparent good health is such an established practice that little discussion of this phase of health maintenance needs elaboration. Early tuberculosis, pregnancy, circulatory and venereal diseases, diabetes and malnutrition are brought to light through this routine physical checkup.

In concentrating only on the "sickness prone" and the employee who seeks aid for "trivial complaints," it is well to remember that the apparently healthy employee may be developing a far more disabling disease.

(*c*) *Consultation Service.*—The medical director should set aside certain hours of the day to be devoted to consultations requested by the employee. The number of such requests will vary in direct proportion to the thoroughness of his health maintenance program and with the sincerity with which it is conducted.

This consultation service is especially important now that the problems women bring to industry are rapidly increasing. Dysmenorrhea, pregnancy and the menopause directly concern the industrial physician. In case of dysmenorrhea, he must decide how much pelvic congestion resulting from the employee's type of occupation influences her symptoms. Suitable wards where women may rest during this time are a part of the medical service and an important aspect in lessening lost time from this source. Further investigation as to the cause of the dysmenorrhea is the responsibility of the employee's own physician.

The menopause is another period in the life of the female employee that presents added problems. At no time in the industrial history of this country have there been so many women over 40 years of age gainfully employed. A condition with which the industrial physician rarely concerned himself now demands attention if he is to have a complete health maintenance program. It is not within his province to treat these employees medically—that is for the family physician—but transfer to lighter occupations requiring less nervous energy and concentration, along with sympathetic understanding, goes far in lessening disability during this trying period.

The consultation service is important in the case of pregnancy. The industrial physician should encourage the female employee to report to him as soon as she learns that she is pregnant. Thus he may advise transfer to lighter and less fatiguing work. His duty to this employee includes checking her environment to make sure there is no exposure to toxic substances. Further, he should see that she is receiving antepartum care by her own physician. If for any reason it is felt that this employee should not continue at work, the decision of the family physician should be final.

8. Giberson, Lydia G.: Psychiatry in Personnel Work, Indust. Med. **12**: 164 (March) 1943.

9. Johnson, Orlen J.: Public Health and Medical Relationships in Industrial Health, Am. J. Pub. Health **32**: 1157 (Oct.) 1942.

10. Legge, Robert T.: Bottlenecks and Progress in Industrial Medicine, Indust. Med. **11**: 530 (Nov.) 1942.

To counsel women employees properly, the individual doctor should be familiar with the recommendations of the Report of the Committee on Health of Women in Industry of the American Medical Association [11] and the statements prepared by the Children's Bureau and the Women's Bureau of the U. S. Department of Labor.[12]

(*d*) *Health Education.*—The conventional approach to health education for employees is through the medium of posters, pamphlets, folders, articles in plant papers, speeches and motion pictures. By these methods the common cold, nutritional disturbances, tuberculosis, venereal diseases and the importance of proper care of the teeth may be brought to their attention. Such an educational approach should be made colorful and interesting. Posters designed by the U. S. Public Health Service act as an excellent example of this type of propaganda. Because many of these diseases are the greatest cause of disability among female workers, it is now more important than ever before that such an educational program be conducted.

(*e*) *Routine Factory Inspection.*—The routine inspection of conditions under which female employees are working is essential to good health. Of course the problems of ventilation and lighting are very much the same for male as well as female workers. However, the question of fatigue is one that requires much consideration, particularly now that many women are manning the machines formerly run by men. The adustment of these conditions should not be left solely to the safety director, for only too often he does not appreciate the physiologic and structural differences between male and female workers. Furthermore, it is the responsibility of the medical director to know to what extent the female employee is subjected to toxic exposure. As mentioned previously, this is of vital importance in the case of the pregnant woman.

(*f*) *Health Conditions Outside the Factory.*—Knowledge of conditions in the community where the factory is located is an essential phase of a good health maintenance program. Frequent contacts should be made with the local health agencies so that the industrial physician may be prepared for epidemic keratoconjunctivitis, contagious diarrheas, tuberculosis, syphilis, gonorrhea, smallpox and poliomyelitis. The industrial physician often considers the health of the employees as something apart from that of the surrounding community. However, close cooperation with those charged with the responsibility of the problems of public health has proved most valuable to the industrial physician.

MEASURES EMPLOYED TO LESSEN LOST TIME ONCE SICKNESS APPEARS

(*a*) *Care of Minor Ailments.*—The recording of and caring for minor ailments is the best opportunity the industrial physician has to further "prevention." Abdominal distress, repeated colds and excessive menstrual periods are often found to be the early symptoms of gastric or duodenal ulcer, appendicitis, early tuberculosis or definite pathologic conditions in the pelvis. Emphasis on the advisability of a further examination by the patient's own physician sends many to the doctor's office for relief of symptoms commonly considered too trivial to necessitate medical consultation.

(*b*) *First Aid in Urgent Illness Occurring While at Work.*—The giving of first aid to employees who become seriously ill while at work is the responsibility of the industrial medical department. Its duty is not discharged by seeing that the employee is returned to her home. She should be cared for in the industrial hospital until such time as the family physician can be notified and his advice followed. Length of disability from serious illness can be vastly lessened by seeing that prompt medical attention is obtained for the seriously ill employee.

(*c*) *Hospitalization Through Group Insurance.*—To protect employees adequately during illness, it has become increasingly evident that hospitalization should be provided through group insurance or some other plan.

Many industrial institutions have sponsored this arrangement. Such protection is especially needed at this time because of the overcrowded and inadequate housing conditions in many of our large industrial communities.

Proper nursing care shortens the period of disability. This is an important objective.

(*d*) *Visits to Disabled Employee by the Industrial Nurse.*—Management's interest in the disabled employee is made evident by the visits of the industrial nurse. The sick employee deeply appreciates sincere concern for her health. Confidence in the medical department is increased by sympathetic understanding and encouragement at such times. The duties of the industrial nurse include arrangement of sick benefit payments, allaying fear and apprehension on the part of the employee concerning her job, and other activities. It is a field of personal service.

(*e*) *Rehabilitation.*—The final chapter in the health maintenance program concerns the period of rehabilitation following serious illness or accident.

The employee should receive a careful physcial examination at this time, and placement at work should depend on the findings of the industrial physician as well as on the opinion of the employee's own doctor that she is physically able to return to work.

The industrial physician is the one who best understands the worker's ability to do her usual work and advises that she be given less strenuous tasks or that she be allowed to work only part of the shift during this period of convalescence. He should be informed by the employee's physician as to the exact nature of the previous disability and value his opinion as to the present status of the employee's health. However, the final responsibility of safe placement at work must rest with the industrial physician.

CONCLUSION

To many this outline of a health maintenance program for women in industry may appear too detailed or wholly unnecessary. However, it is based on an experience in an industry that for many years has successfully employed thousands of women workers.

The ethical relationship between the private practitioner and the industrial physician, which has been discussed, should be reemphasized.

The success of any health maintenance program in industry depends on the extent of the "fact finding" of the industrial physician and the cooperation of the doc-

11. Hesseltine, H. C.; Burnell, Max; Litzenberg, J. C.; Schauffler, G. C.; Seibels, R. E.; Phaneuf, L. E., and Williams, P. F.: Women in Industry: Preliminary Report of Committee on Health of Women in Industry of Section on Obstetrics and Gynecology, J. A. M. A. **121**: 799 (March 13) 1943.

12. Standards for Maternity Care and the Employment of Mothers in Industry, U. S. Department of Labor, Children's Bureau and Women's Bureau, 1942.

tor in private practice. That this can be done ethically and scientifically has been proved repeatedly. The best interests of the employee, the employer, the medical profession and the community are served when the responsibility of such a relationship is clearly understood.

ABSTRACT OF DISCUSSION

DR. LYDIA G. GIBERSON, New York: In the light of my own experience, the employment of matrons not specifically trained in social, nursing or psychiatric work might easily lead to a diffusion of effort and in extreme cases to the formation of shop cliques, which would defeat the purpose of the matron service. Wherever available help exists, the employment of a graduate nurse who is in the first place thoroughly familiar with the industry in which she is employed would be ideal and she should be given the additional training necessary to carry out the functions described by Dr. Burnell. Such a nurse should be of such a personality to invite confidence, and her patience and tact should be of high order. Fully recognizing the outstanding work many counselors have contributed, particularly during the war emergency, the soundness of some of the counseling services has often been impaired by a lack of specific training in recognizing emotional factors and their relationship to physical disease. My experience has shown that the creation of what may be termed a "zone of neutrality" by management has succeeded in gratifying measure in absorbing many of the frictional shocks arising from psychiatric or straight physical causes. The "zone of neutrality" is the psychiatrist's office where an employee may talk over his problems without any fear. The obvious conclusion is that there is a dearth of trained people, particularly as they relate to my branch of industrial medicine. It would be necessary that these be available before Dr. Burnell's well conceived program could be properly implemented. The only apparent answer for the moment is the additional training, at least in rudimentary fashion, of the already overburdened industrial medical personnel and the fundamental education of all persons coming into direct supervisory contact with the workers.

DR. H. A. VONACHEN, Peoria, Ill.: The attitude should change on certain jobs where the safety devices are based on man operation. One should regard women with consideration of the physical and emotional limitations of the sex, remembering that the female must be considered as three fourths of a man physically. I feel that each job should be studied from the standpoint of monotony, fatigue, lifting, lifting aids, lighting and rest periods. Perhaps the most important consideration is the physical examination (preemployment) with careful attention being paid to the all important previous medical history of the employee, particularly that portion which deals with female disorders and menstrual history. If the preemployment examination is thorough, at least 60 per cent of the potential industrial problems will be eliminated at the start. I feel that regular supervision allows early recognition of changes in the employee's attitude and application to work and reference of the troubled employee to the matron. We have instituted this system in the plant with which I am affiliated, with good results. Our policy with regard to pregnancy is explained to the prospective employee in a pamphlet given at the time of her induction. We cooperate with the family physician in this problem, the same as we do in all problems of the employee which are in the field of general medicine. It is our policy to refer immediately to the physician any case which we uncover and find to belong in the sphere of the family physician. In the case of pregnancy we require that the employee bring in a letter from her physician each month, keeping us informed as to the progress of her pregnancy. A leave of absence is arranged in the fifth month, carrying on until three months post partum, at which time she is returned to work if she can successfully pass another examination. We have an educational program pointed toward preventive medicine and personal hygiene which is carried on through the medium of the plant periodical, which is published biweekly and in which articles dealing with medical problems and diet are regularly presented in a section devoted to the medical division.

PROPER PLACEMENT OF WOMEN IN INDUSTRY

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The entrance and acceptance of women in the heavier industries has been almost as spectacular and unexpected as the unsuspected attack on Pearl Harbor itself by the Nipponese. Little did we realize, at the start of all this, the important role women would occupy in the essential war industries.

Prior to this the operation of lathes, grinders, coremakers, molders and so forth was strictly a man's job. The mere thought or suggestion previous to the outbreak of hostilities with the Axis of women running the various heavy machines was pooh poohed and joked about. The majority of those in the heavy machine shops thought and said it could not be done. The emergency, however, became so great that something had to be done. Men were needed for our armies on all fronts—but they were also needed by our essential war industries. Military necessity demanded the release of manpower for the Army, Navy and the Marines. Production would have to be curtailed unless a worthy substitute could be found.

The problem of employing women to replace men on lathes and other heavier machines was started in the early part of 1942. The use of womanpower was not to create new jobs for them but to use their skill during the emergency. As a result of this newly created endeavor, many problems presented themselves both to industry and to society. Men were being replaced gradually by women between the ages of 18 and 60. The problems they presented were complex and difficult.

TRAINING PERIOD

The most obvious problem of all was the training of our newly acquired women employees. This of itself entailed many serious discussions between management and the government. The final outcome will probably come with the end of hostilities.

Before our industry could employ women, special permission had to be obtained from the Department of Labor. Our state laws pertaining to the employment of women definitely stated that they were not to work after 11:40 p. m., nor could they work more than forty hours per week. This law, of course, would have to be rescinded by the state department of labor in order to allow industry to employ women on the various shifts. As a rule the shifts usually are divided into three shifts per day consisting of eight working hours.

In addition to revising the labor laws, immediate plans had to be made to furnish proper rest rooms and toilet facilities as a necessary item to feminize the industrial world. Supervision had to be taught and educated in the proper handling of women workers. Women, as a rule, are very sensitive to harsh treatment. The old line foreman is definitely out of place in the modern plant.

A brief outline of our experience in training of female employees can be stated as follows (a word,

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however, should be said here that our training program, since Pearl Harbor, has passed through many phases): A survey had to be conducted by plant management in the early months to determine the various jobs, in the many departments, that could be filled by women. It was concluded by the survey that hundreds of jobs could be done by our prospective female employees.

In order that the trainee might be properly fitted for her job, a training program as similar as possible to the working conditions of the plant itself had to be devised. Close cooperation between plant and the local vocational school was necessary. To facilitate matters further, identical machines were used at the vocational school as were used at the plant. Instructors were also furnished by the plant management. (The men picked as instructors were usually experts in their particular field. Although instructors in the vocational school, they were maintained on the payroll of the firm.)

The training period usually consisted of four to six weeks. At the completion of the training, the trainees were hired and placed on machines as operators.

Since the inception of these courses, the vocational school has become a unit of the defense training program—which is now known as the war production program—operating day and night to train qualified men and women to fill vacancies caused by plant expansion and loss to the armed forces.

The training of applicants depends a great deal on the type of work to be done by the individual. Of course, not all the training is done at the vocational schools: part of it is carried on at the plant itself.

In the early months of our program these trainees were not carried on the payroll, but as time went on the training program again changed, so much so that the following program is now in effect. It is the management's responsibility to induct new workers properly and to supervise adequately.

We now have two types of learners: student learners and regular learners. The student learner is hired and placed on the payroll but is not sent into the shop until she receives a thorough training in the particular job she is to accomplish when she has properly fulfilled the requirements at the vocational school. This type of learner spends eight hours a day for about four to six weeks or until she is judged capable. This type of worker is usually placed in the tool room or some special section in the assembly. The learner is then labeled as "specialized."

The regular student, however, is somewhat different. She is placed on the payroll and spends half her time in the plant and the other half at the vocational school. This program is in effect until her instructor and supervisor considers her eligible as a qualified operator. A few of the occupations taught at the plant itself, where women are now being used, are making cores, molding and even cleaning castings.

I quote our experience with the first 3 women employees hired for shop work:

1. A woman aged 20, single, who weighed 110 pounds (50 Kg.) and who was 5 feet 4 inches (163 cm.) in height, had formerly been a typist. As a learner coming from the vocational school she was given an opportunity to study and observe an internal sizematic grinder at work. When capable, she was transferred to a machine. She participated in the bonus plan and other plant activities. During the interval she was allowed to run a machine and was shown her mistakes. She was treated on the same basis as a man. In two weeks' time she was operating an internal grinder exceptionally well. She was doing good work; the quantity of scrap was surprisingly low.

2. A single woman formerly a grammar school teacher qualified for the job of bench burrer in two weeks.

3. A woman aged 40, married, with three small children, sought a job at hole tapping to replace her 21 year old brother, called by the Selective Service. After two or three days she complained of her hand and arm aching. She continued working, but her efficiency dropped to a very low standard within three weeks. She was transferred to a sensitive drill press and within two weeks was excelling at the work. A woman aged 21, single, whose weight was 175 pounds (79 Kg.), was hired for the hole tapping job. She mastered the task in two days and is doing well.

CLASSIFICATION OF ENDOCRINE TYPES

From a theoretical point of view, women can perhaps be classified endocrinologically so that their behavior and physical and mental make-up can be explained on this basis, but from a practical standpoint of endocrinology one cannot properly place a female employee.

Women workers, as a rule, are subject to "nervous upsets." Few women have the physical strength that men do, probably because of the lack of rigorous physical training. Women workers do not have the same muscular strength as men. Muscular fatigue occurs more readily in women than in men. Thus, girls raised on the farms and accustomed to farm work have well developed musculature and are easily adjusted to hard laborious industrial work. For this reason a man with an average male musculature but with a slight heart murmur would be placed on a light job, whereas a woman with average female musculature and having the same heart murmur would be rejected for the same job. We believe the woman, with less physical reserve, would more quickly call on (and use up) her cardiac reserve than the man.

The glandular factor as it is reflected in women in industry presents some problems. Some glandular disorders have an obvious solution, as, for example, the pronounced hyperthyroid type, which can be corrected only by surgery. But the obese hyperthyroid and the menopausal woman present a problem of employment which is rather difficult to solve and which probably can be only completely solved when we have given these women a thorough trial in industry.

The average industrial interviewer when choosing a woman to do somewhat heavier work is often misled into selecting the heavier woman, confusing fat for musculature and strength. Actually the stout woman has little advantage over the lighter woman in the heavier industrial work except in certain situations where she can use her weight, as in pushing a food truck. In general, an obese woman has less stamina and less physical reserve and is more apt to succumb to various disorders because of her weight, varying all the way from varicose veins to cardiac decompensation.

The menopausal woman presents a tremendous problem, which can be divided into three major factors: (1) obesity, just described, (2) nervous and psychiatric disorders, and (3) hypertension. Of course there are many other factors, including the industrially impossible female who combines all the major factors

of the menopause—the obese, the psychiatric and the hypertensive woman.

All the psychiatric and nervous women should be examined, prior to employment, by a qualified psychiatrist. This, however, is most essential where women applicants predominate. His is the problem whether or not the applicant is stable enough for an industrial position.

The hypertensive case can be classified according to arbitrary standards. These standards vary of course with the needs of industry. In times like these, where manpower is at its low ebb, standards must be forgotten. I remember, prior to our entrance into the war, where an applicant (male or female) was rejected with a systolic pressure range above 150 mm. of mercury and a diastolic above 90 mm. of mercury. As a maximum passing requirement, at the present time, a systolic pressure range of 200 mm. of mercury and a diastolic of 100 mm. of mercury is acceptable, although we try to place these persons in light or very light occupations.

It would be ideal to go into elaborate studies and determine the origin and type of hypertension, but this is not practical in large scale hiring. Only with the passage of time would we be able to determine how successful we had been in our selective process by determining statistically what percentage of applicants can maintain the position to which they have been assigned. If the percentage is extremely low it will mean that we have been too lenient in our selection, but if the percentage is extremely high it implies that we have been too rigid in our selection and have probably deprived war industries of some useful employees.

PREEMPLOYMENT PHYSICAL EXAMINATION

A thorough preemployment physical examination is just as applicable to women as it is to men. As a matter of fact, the problems differ as to both sexes.

Women bring certain problems to industry, and these problems are, medically, mainly due to their difference in physiology—to the fact that women bear children and men do not. Thus, they present the additional problems of menstruation, the menopause, pregnancy and the care of children. This should be a nucleus for the examining physician to bear in mind in the examining of all female employees.

It must be borne in mind that women are more apprehensive than men. To many of these women the thoughts of a complete examination frightens them. Frequently they have never worked outside their own home or may have come from jobs where no physical examination was required. Then too the thought of being examined by a male physician makes many women, if not all, rather apprehensive. She is willing to go to her own physician, or any other physician of her choice, when she is sick or thinks something is the matter with her. She is willing to be thoroughly examined and submit to various tests to get rid of her ailments. In an industrial plant neither of these factors applies, and most women feel most apprehensive.

As industrial physicians we want to give the employee as thorough an examination as possible both for her own sake and for the sake of her fellow employees but still have it pleasant and free from any embarrassment. We want her to realize that the examination is for her benefit as well as for the particular industry she is to enter. These factors sometimes play such a part as to influence and make it difficult to interpret properly the resulting examination. This particularly is true for the average industrial physician who himself is a newcomer to an entirely different field.

Women, as a rule, are usually less nervous when they know they are going to be examined by a woman physician. Thus, a woman physician can do a more thorough examination, particularly as regards hernias, pregnancy, cystoceles and rectoceles, without embarrassment on the part of the woman applicant.

A complete pelvic examination is not done at any of our preemployment examinations. If a thorough examination is necessary and essential from preliminary workup, she is referred to her family physician for this pelvic checkup.

The physical examination, to be of any benefit, should be as thorough as possible and should include a brief personal history. The examiner must know the type of work to be performed by the employee. One should observe the general appearance of the applicant, check for varicose veins, note all deformities, examine for hernias, both femoral and inguinal, and note the condition of the applicant's spine, skin, kidneys, blood pressure and vision. X-ray examinations, a Wassermann test and urinalysis should be included.

The physical requirements will change from time to time, depending on the type of work and also on the type of industry. I remember, not too long ago, when prospective employees had to be practically perfect before they were passed physically for employment. Today this does not hold. Owing to the shortage of manpower we had to lower our standards and we are still lowering them.

One must bear in mind that it is only by a proper and thorough physical examination that we can properly place our prospective employees. The applicants of today have been sifted over and over rather thoroughly, and what remains to be hired is not a very select group, physically speaking. The incidence of major defects in this group runs high. Before the war, applicants with major defects were not hired; but now we must try to place as many applicants as we can, despite their large handicap, in occupations where they can do no harm to themselves.

These handicapped employees should be encouraged to recognize their responsibilities as permanent employees alongside those who are better endowed physically. This applies only to those physical handicaps which are not objectionable or dangerous to fellow employees. Diseased persons should not be accepted into industry. A problem recently came to my attention of a young woman who was passed by the examining physician. A notation was made on her chart of a dermatitis of both hands of a noncontagious or noninfectious nature. She in turn was accepted by the interviewer and supervisor, who were told of the skin rash. It was not too many hours after starting that her fellow employees started to grumble and become dissatisfied because of her skin condition. It became obnoxious to them and they threatened to leave their machines unless the woman was removed. This happened not once but four times in various departments until we had to ask the girl to leave her job temporarily —at least until she had the rash on her hands cleared up completely.

Another condition which is frequently missed and difficult to diagnose in the female applicant, unless otherwise obvious, is an inguinal hernia. We have seen four inguinal hernias in the past six months. Prior to this I had not seen one single inguinal hernia in the past eleven years. These hernias, if they had existed before employment, were completely missed. In the first instance a girl aged 18 years was employed only three weeks when she came to the hospital complaining of pain and a lump in her right side. Two other women were in their late twenties and were employed only two to four weeks. The fourth was a girl in her late teens and was employed only one week.

I do not believe that women who are pregnant should seek employment, especially in the heavier industries. Of course, if they are already employed, certain allowances should be made. The matter of time is an arbitrary one, depending on the length of time employed, her physical and mental attitude, previous pregnancies and finally the danger to which she is exposed. Epileptic women, however, should not be accepted under any circumstances on machines either light or heavy. They can nevertheless be employed on light inspection work away from all machines and on clerical jobs.

Women, as stated before, were placed almost exclusively on clerical work, but now they are placed in the shop. Among the machines which women are operating efficiently are milling machines, turret lathes, tapping and drilling machines (including large multiple spindle drills), punch presses, grinders of many types, including internal and external cylindric, thread, centerless and surface, as well as cutters and other tool grinders. They are also becoming proficient in the foundry as coremakers, molders and casting cleaners.

FOLLOW-UP

The follow-up system used by various industries is a valuable adjunct in evaluation and proper selection of the new applicants. It is true that, no matter how perfect we think our selection of female factory workers may be, they nevertheless require continuous follow-up to determine whether or not the new applicant is mentally and physically satisfied with her newly assigned job and also with her new environment. It must be remembered that only a few of the women had any shop experience before taking on their present jobs. All the women employed had to learn the jobs they now perform, but they are doing them as well as male employees, whom they now outnumber about three to one.

Here in our plant all follow-up of new employees was previously done by male clerks from the personnel department. They interviewed male and female employees, but as time went on it was decided to use women in the follow-up of women. This job was then designated to the female counselor. It is the function of these counselors to become thoroughly acquainted with all the help allotted for the overseer. The first interview with the female employee takes place about the fifth or sixth day after she has been hired. This interview usually takes place in the department. This is often spoken of as the "first contact." The employee is approached for the purpose of getting acquainted. It is strictly intended as a friendly chat, having both parties discuss what is uppermost in their minds. The discussion will, of course, vary with the individual. Some will discuss the type of work which is assigned, while others will want to know about insurance, health, sickness and occasionally home affairs. These interviews, as a rule, lead to a better understanding and better cooperation between supervisor and employee. Usually, health problems which were merely mentioned to the examining physician are more thoroughly discussed and explained.

The second interview, which is really considered the follow-up, takes place five or six weeks after hiring. The discussions here usually tie up with the first interview, only on a larger scale. By this time both employee and counselor have become acquainted and a closer relationship thereby exists. In our plant, care is exercised by our counselors never to divulge any personal confidences or expose the employee to supervisor, management or any other plant agency. Everything is held in strict confidence. It should be stated here, however, that supervisors were rather slow to get adjusted to these new developments. But at the present time they have realized the value and necessity of this service and they are more cooperative. I understand that at times this second interview is almost entirely medical. It seems that women are much happier and contented when they can find a welcome ear to tell their troubles to. In addition, we find that they discuss rather freely their emotional status and their special female functions of the menopause, menstruation, pregnancy and dysmenorrhea. Also isolated cases are brought to light in which help can be given with later transfer to a more suitable occupation. As an example I will briefly cite a case which was brought to my attention by one of the counselors:

> Mrs. H. L. received some radium burns about several of her fingers while in the employ of a research medical laboratory during the first world war. The burns were only minor and completely passed both the examining physician for the company and the examining officer of the Navy. She was assigned to a bench burring job. This in turn required her to use emery paper for buffing and polishing. This caused an irritation and aggravation of the radium burns about the fingers. She was reluctant to mention anything about this to her foreman for fear of losing her job, but she did mention it to her counselor, who in turn, with the permission of the woman, reported the incident to the medical department, which in turn recommended an immediate transfer to another job that required little use of the fingers. This recommendation was acted on, which was most satisfactory to the employee.

The third and final interviews take place about five to six months later.

CONCLUSION

The important thing to keep in mind now is that women are on the job in war industries. They are turning out the quantity and quality of work the war demands.

The majority of our women are successful at small precision machine work and are more attentive to a repetitive job than men. Generally speaking, women are not as inventive as men. If a machine should break down nothing is done about it, whereas a man will make every effort to find out what is wrong and then make arrangements for the proper repair.

Our nation will need the particular strength and ability of women even more as time goes by. It is

only sound sense to do everything possible, within the plant and beyond it, to safeguard their health and efficiency for ultimate victory. Total war is a new game for Americans, but I am positive that we have the ability to utilize all our resources effectively.

ABSTRACT OF DISCUSSION

DR. W. A. SAWYER, New York: Most industries are employing a great many persons with major impairments. This is not too serious, provided there is careful job placement. If jobs are studied from the point of view of what a woman can do and the work is reorganized mechanically, as it has to be in some instances to fit the woman's physical capacity, the end results are generally satisfactory. We are all amazed at the variety of jobs which women can perform. More attention must be paid to a woman's outside activities and responsibilities than ever has been paid to a man's. Even if a woman does not have a home with children to look after, which gives her two jobs instead of one, there are many things which she has to do for herself and which, with a long work week, she can do only if she takes time off. That in part accounts for the high rate of absenteeism. Woman's place in the community in some respects requires more of her than it does of a man. Industry will have to adjust its schedules and hours of work to enable women to do two jobs. If the strain of doing two jobs becomes too great or if the woman is not sufficiently strong physically and well enough integrated mentally, sooner or later she will become fatigued and possibly seriously ill. I do not believe that a woman trying to carry a double load can last much more than a year without exhausting herself. No woman who is conscientious about her home and children is going to be able to work as wholeheartedly at her job when she knows that the home and family are suffering as a result. In my own community there are far too few agencies and facilities to care for children during working hours. If this war is to go on for a number of years, certainly this phase of the problem must be developed more adequately. Recently the question arose of changing to the night shift a woman weighing 106 pounds who had two small children. She lost her husband in North Africa a year ago. Her mother is taking care of the children during the day, but she does it unwillingly and not too well. When the question of changing to the night shift came up this worker rebelled, and rightly so. If she should go on night work there would surely be a breakdown. One could cite cases of this type again and again. There is no problem of training women to do the work they are wanted to do. Allowances have, of course, been made for them physically, and the absence rate is high. The question of pregnant women has not been a troublesome one. The great problems have been nervous exhaustion and the usual run of other illnesses which, I believe, are due in large measure to the strain of trying to do two jobs.

JENNIE MOHR, Associate Industrial Economist, Women's Bureau, U. S. Department of Labor, Washington, D. C.: Despite the shortage of manpower, it seems rather extreme to say, as Dr. Barlow does, that "standards must be forgotten." Even if workers are scarce, it does not pay to take on those incapable of working or incapable of sustained production. Standards need not be forgotten, but they must be realistic. That means that the factors discussed by Dr. Barlow should be part of a placement program for each individual worker and that workers be utilized to their fullest capacities, but not beyond. There seems to be some difference of opinion among physicians as to the extent to which the menopause is a serious deterrent to the placement of older women. Dr. Barlow calls it "a tremendous problem." Other physicians have said that, unless some specific abnormal condition appears, industrial life seems to offer no greater obstacle to older women than do other circumstances. It is true that older women have not been used in certain industries to the extent to which they are now being used. In others, such as the manufacture of clothing and textiles, older women have long been employed as a matter of course. In any case, as Dr. Barlow indicates, their placement on jobs must be the result of a careful analysis of their physical and psychologic abilities. A well defined plant policy concerning the employment of pregnant women is an essential part of a placement program. The fear of being fired as soon as they are known to be pregnant leads women to conceal their pregnancy and makes impossible their protection against work or working conditions that may be especially dangerous for them. With respect to laws regulating the employment of women, it should be noted that the forty hour regulation to which Dr. Barlow refers pertains only to the payment of overtime beyond that number of hours and applies equally to men and to women. Laws regulating the hours women may work vary from state to state. In the state in which Dr. Barlow's plant is situated, women may work fifty-four hours a week. One must not forget that women are not new to industry, not even to heavy industry; they are new only to some plants. During the first world war women operated many machines, such as turret and bench lathes, punch and drill presses, millers and grinders, and took on many new jobs under the pressure of war. In 1930 there were more than 60,000 women operatives in iron and steel, machinery and vehicle industries, 3,000 of them in blast furnaces and steel rolling mills. Our present concern is to see that now, and continuing after the war, the placement of women in jobs is done with full consideration of all we can learn about their needs, limitations and capacities. To this end it would be of the utmost value if physicians would undertake studies to determine the specific effects on women of certain occupations or certain working conditions about which we can at present only speculate.

DR. GEORGE MORRIS PIERSOL, Philadelphia: In addition to the points brought out by Dr. Barlow there are many other problems of far reaching importance that must be considered in connection with the placement of women in industrial jobs. It has long been recognized that women should not be required to do heavy lifting. Efforts to regulate this has been attempted, but no satisfactory formula has yet been devised. The safest rule is to limit all lifting to a minimum and to avoid it whenever possible. The role of fatigue takes on added importance in the case of women employees. It has long been recognized that fatigue is one of the chief factors responsible for reduced production, accident frequency and sickness absenteeism. Since it is admitted that on the whole women are more susceptible to fatigue than are men, special efforts should be put forth by employers to control the fatigue factor in the women employees. The length of the work week has been shown to be one of the most important influences in the production of fatigue. An example of this was found in England; when the work week was increased to seventy-five hours women suffered 287 per cent more accidents, an increase over twice as great as that observed in men under similar conditions. The total work accomplished in a given period of time is definitely increased by regular periods of rest. Closely allied to this phase of the subject is the question of night work. It is generally conceded that the physical effects of night work are much more disastrous to women than to men and that such deterioration occurs sooner in women. In order to minimize accident hazards, women who are employed, especially in those industries in which complicated machinery is used, should abandon their ordinary attire for suitable work clothes. They should be required to wear overalls, suitable low heeled, closed toed shoes, gloves whenever rough or irritating materials are to be handled, and the hair, particularly if it is long, should be adequately protected. The introduction of women into industry has focused renewed attention on the importance of providing good working conditions and making available clean, comfortable and cheerful rest rooms, wash rooms and eating facilities. The often discussed and important problems connected with menstruation, pregnancy and the menopause in women workers need no further elaboration. Even with the successful conclusion of the war it is not unlikely that many women now employed will continue to be actively engaged in various industries. The questions that arise in connection with their proper care are therefore not merely ones for immediate concern but will engage the consideration of employers and industrial physicians in the future as well.

SPECIFIC PROBLEMS OF WOMEN IN INDUSTRY

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From the obstetrician's and gynecologist's point of view specific problems of women in industry should include menstrual disturbances or abnormalities, the menopausal syndrome and pregnancy. Gonorrhea and the other venereal diseases with the exception of syphilis have as yet no established relationship to absenteeism. Even though syphilis is a serious complication in obstetrics and gynecology, the dermatologists and syphilologists have exhibited special interest in its relation to employment. Nutritional needs and food shortage loom larger as the complexities of food ration and the point system extend particularly for wives and still more so for mothers who have limited time for shopping and preparation of meals because of their employment. Other important considerations are the preemployment examination and placement, health maintenance programs and working conditions of women employees. By assignment, this elaboration will be restricted to menstrual disturbances, menopausal symptoms and pregnancy in relation to employment.

The term woman or women will mean all females of the age of 15 years and over, unless specifically indicated. In a strict sense the biologic and physiologic age should be employed, but because of its variability in relation to the definite chronological age and because a mean average is adequate the arbitrary selection of 15 years and over has been rather generally accepted. Objections to the employment of these really young women has come forth, but the extreme labor shortage and the great urgency for employees have caused a relaxation of the rules governing employment and necessitate a survey of the whole problem. Women may be divided readily into two groups: (1) menacmic, or 15 to 44 years inclusive, and (2) postmenacmic, or 45 years and over. Again, this is an arbitrary division but it will serve the purpose.

The need for women in almost all industries has reached the greatest peak for percentage employment. It is common knowledge that women have recently, for the first time, entered into types of work which heretofore was performed exclusively by men. Many industries encountered new and troublesome problems with the admission of women employees, while those plants accustomed to female workers experienced little difficulty as a rule. Even plants experienced in the problems peculiar to women faced new problems through the use of women who were unaccustomed to employment. In many instances new policies, as well as the increased number of women, favored difficulties.

In normalcy those who could not or should not work regularly and dependably could be replaced. Also in normalcy the placement of the employee was easier because of much lower turnover rate and because of regularity in replacement. The total number of employed women continues to grow, and the choice of acceptable employees becomes less and less favorable from a medical point of view.

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Because reliable information is not available, it has been necessary to utilize opinions and ideas to formulate even a preliminary program for the conditions peculiar to women in relation to their employment. However, certain facts are available on the female population, and these permit some calculation.

FEMALE POPULATION AND LABOR FORCE

It has been estimated that 18 million women will be needed and probably obtained for employment by December 1943. Table 1 indicates the trend since June 1940. For May 1943 there were about 400,000 women desiring employment, while about 15,900,000 were employed, which makes a total labor force of 16,300,000. The great number now working and subsequently needed in nonagricultural positions must be secured from urban areas (generally communities of 2,500 and more). This means that about 1,700,000 more female workers must be procured from an essentially empty reservoir to fulfil the estimated quota for December 1943.

TABLE 1.—*Female Labor Force*

Employment and Unemployment in Continental United States Exclusive of Institutional Population and Armed Forces Expressed in Millions of Persons Aged 14 Years and Over.

	Total Labor Force	Unemployed	Employed		
			Total	Agricultural	Nonagricultural
June 1940 *.....	13.9	2.7	11.2	1.5	9.7
May 1941.....	13.3	1.8	11.5	1.2	10.3
May 1942.....	14.2	1.0	13.2	1.4	11.8
May 1943 †.....	16.3	0.4	15.9	1.8	14.1

* Earliest available estimates in 1940.
† Latest available estimates.
(Department of Commerce, Bureau of Census, Monthly Report: The Labor Force, May 31, 1933, Current Surveys: M. R. L. F., No. 12).

TABLE 2.—*Female Population*

United States Census, April 1940, Expressed in Approximate Millions

Age Groups	Rural		Urban	Total
	Farm	Nonfarm		
15 to 44 years inclusive.....	6.3	6.2	19.5	32.0
45 years and over.....	3.3	3.4	10.7	17.3
15 years and over.....	9.6	9.6	30.2	49.4

June 1943 estimates would not exceed 2 per cent probably that of April 1940

Table 2 gives the distribution by community and menacmic status. On calculation of present day population of women it seems definite that the number would not amount to 51 million. Of this number nearly 60 per cent are in urban communities. Approximately 66 per cent of the urban group are under the age of 45.

A further restriction to the theoretical calculation of available women is the number of mothers with small children (table 3). Recently it was reported that about 7 million women have children under the age of 5 years and 11 million have children under the age of 9 years. At the present time it is very probable that about 3 million women have children less than 1 year of age. These data illustrate some of the conflicting views relative to an available labor force. Another factor is the demand in individual communities which is out of proportion often to the available help. This applies to concentrated industrial areas and to small urban communities where special projects have absorbed all the available laborers and need more. Industries competing with one another have caused much disturbance in production through a rapid turn-

over of employees. This great change has taxed the plant physician, who must examine each employee whether the employee remains or leaves within a short period.

The use of women in all and in war industries is concretely expressed in table 4. In December 1942

TABLE 3.—*Estimated Number of Women with Children, April 1942* *

Expressed in Approximate Millions

	Labor Force	Nonlabor Force	Total
Under 5 years	0.5	6.2	6.7
5 to 9 years	0.6	3.5	4.2
10 to 16 years	0.9	3.7	4.6
Under 16 years	2.0	13.4	15.5

* Latest available figures.[3]

there were approximately 15 million in all industries, which was about 30 per cent of all women. About 3 million were employed exclusively in war industries. This represents about 7 per cent of all women, or 23 per cent of the employed women. The projected figures for December 1943 are 18 million in employment, or 36 per cent of all women of 15 years and over. From this group some 6½ to 8 million women, or 13 to 16 per cent of all women or 36 to 44 per cent of women employees will be utilized in war industries alone.

The labor shortage is so acute in some localities that some plants would have to employ many who could not pass the satisfactory preemployment physical examination if 100 per cent quota of employment was to be accomplished. Table 5 lists the types of female employment as of May 1942. The great scarcity of present day domestic and personnel help illustrates that the great bulk of this group have already shifted into other types of work or retired from work. It seems certain that many from other groups have gone also to the war industries. It is rumored that some professionally trained women, as nurses, have given up their profession to go directly into ordinary employment because of better pay of the latter. This type of shift is a distinctly unpatriotic act at a time when skilled and experienced people are in such great need.

TABLE 4.—*Estimated Number of Women Employed*

	Millions	Per Cent of All Women	Per Cent of Employed Women
December 1942			
All industries	15 *	30	..
War industries	3.5 †	7	23
December 1943			
All industries	18	36	..
War industries	6.5-8 ‡	13-16	36-44

* Bulletin 193, Woman's Bureau, U. S. Department of Labor, July 1942.
† Women's Bureau Release "Women in the Labor Force," July 18, 1942.
‡ Author's estimate.

Arguments continue on the relative merits of essential work in amusement and recreation.

Various answers and proposals remain before us for meeting the labor shortage and production demands. The solution appears to be the elimination or reduction of each of the causative factors. Lynch[1] observed that 6.3 per cent of all sickness disability of eight or more days duration resulted from genitourinary conditions. Mothers or wives may elect to absent themselves to perform household duties, such as laundering, shopping or caring for a sick member of the family. These mothers and wives often work almost as many hours at home as at the plant, which predisposes to absenteeism. Others may remain away from work for personal and nonvalid reasons.

An evaluation of women not in the labor forces indicates that sacrifices must be made by many of these if they are to become employees. Likewise, absenteeism may be increased in this group. Table 6 shows the relation of the unemployed female of the age of 14 years and over to their class. In April 1943 there were approximately 36,200,000 females not working. Slightly under 30 million (29,400,000) were doing their own home and house work, while slightly over 4 million (4,200,000) were in school. From these and other figures it is evident that, if the increase in the labor force is to continue as planned, more wives and more mothers must enter industry.

TABLE 5.—*Type of Work for the Estimated 13,500,000 Employed Women, May 1942* *

	Millions	Per Cent of Total
Domestic and personnel	3.4	25
Manufacturing	3.0	22
Professional (nurses, teachers and others)	1.9	14
Retail and wholesale trade	1.9	14
Agricultural	1.5	11
Government service	0.8	6
Amusement and recreation	0.7	5
Transportation and public utilities	0.4	3

* Latest available estimates.[3]

TABLE 6.—*Estimate of Females Not in the Labor Force by Class of Nonworkers*

Millions of Persons 14 Years and Over, April 1943 *

Total	Own Home Housework	School	Unable or Too Old	Other
36.2	29.4	4.2	2.2	0.4

* Latest available data.
The Labor Force Bulletin, L. F. B. No. 3, June 17, 1943.

WOMEN EMPLOYEES AND PRIVATE PHYSICIANS

The ratio of physicians to the public and the employed woman has changed greatly. The armed forces have and will continue to take many physicians. At present there are about 88,000 active physicians for the civilian populace, which makes a ratio of 1 physician to slightly over 1,400 people. By December 1943 the ratio will likely be 1 active physician to each 1,500 civilians. This will make a mean average of 1 active physician to slightly over 200 employed women. Obviously these averages do not reveal the deviations which occur in various communities. These facts reveal that every physician should become even more interested in the problems of women as related to their employment. This education on the part of the physician is essential for better cooperation with the plant physician in the interest of employees and the physician's patient. The better the cooperation, the more conducive it is to the war effort. Previously, industrial physicians were not particularly concerned with obstetric and gynecologic conditions, for such states fell in the category of nonindustrial conditions. Nowadays the industrial physicians face greater burdens through new problems in connection with all new workers, many of whom are unskilled, unprepared and unaware of dangers or

1. Lynch, D. L.: Industrial Health and the War, New England J. Med. **227**: 209 (July 30) 1942.

safety precautions. Industrial physicians will welcome the opportunity of reciprocation in appropriate cooperation with the obstetrician and gynecologist.

MEDICAL PROBLEMS

The Committee on the Health of Women in Industry of the Section on Obstetrics and Gynecology of the American Medical Association [2] made recommendations pertinent to the essentials of a medical service in industry, general hygiene for women in industry, need for physical examinations and placement and the states of menstrual abnormalities, of the menopause and of pregnancy. It has been insisted [3] that the future programs and policies will have no better foundation than the present unless exact information is obtained about these specific problems of women in industry.

Adequate data on absenteeism from menstrual irregularities and distress, the menopausal syndrome and pregnancy are not available. Progress is obstructed badly through the lack of specific data. Such data could be accumulated by the cooperation of a sufficient number of employees, their employers, the respective industrial physicians and an unbiased competent group, commission or committee. Such a committee, group or commission should have a fair representation of obstetricians and gynecologists. The government or some private agency could make a valuable contribution through adequate support for a thorough study on causes of absenteeism of women employees. With several million women in industry an enormous number of days lost must be expected unless and until the causes can be reduced or eliminated. The number of women serving in the armed forces could be used for observations on problems of menstrual abnormalities, for these are normal healthy women. Any lesson learned even with this group could be applied to others. The first step is to get facts, for ideas are unreliable.

The placement of women in industry, the health maintenance program and working conditions for female employees have been elaborated on by others.

Since the employer must use to the best advantage all women employees, since replacements are not readily available, specific problems are truly important. It is common policy for most industries or industrial physicians to refer the employees to competent physicians for the personal problems of the employee. The industrial physician, directly or through councilors or matrons, may learn of employees who would benefit by consultation with the employee's own physician. Specific problems include menstrual disturbances (amenorrhea, menorrhagia, and metrorrhagia and dysmenorrhea), the menopause and pregnancy. Menstrual and menopausal disturbances are symptoms. First, it must be stated that present day information indicates that ordinarily menstrual and menopausal disturbances are not the result of employment. A prospective employee may fail to reveal her catamenial distresses or abnormalities, particularly if she suspects that such an admission would be unfavorable toward her employment.

MENSTRUAL DISTURBANCES

A. *Amenorrhea.*—If one excludes pregnancies and the menopause there are comparatively few instances of amenorrhea in the fully matured woman. Amenorrhea may occur in the teen age women, but it is usually not significant. Even so, Jameson [4] and Hesseltine and Spear [5] recorded instances in which amenorrhea was the first or early symptom of pulmonary tuberculosis in women under 25 years of age.

It is general knowledge that tension, worry or undue excitement may be associated with either amenorrhea or a menorrhagia. Younger women in positions of responsibility may manifest such physiologic behavior. Anesthetists, instrument nurses and airline stewardesses have been typical examples. There is no reason why young women in other industries should not be potentially subject to the same reactions. A change of schedule or a transfer to another institution, although one may be doing the same work, may relieve the condition promptly. This correction can be expected only in the absence of organic states. Organic causes must be excluded. This is the function of the employee's personal physician.

B. *Metrorrhagia and Menorrhagia.*—Metrorrhagia and menorrhagia must be considered as a symptom of an existing pathologic condition within the individual. Menorrhagia and metrorrhagia should be considered symptoms of a serious existing condition such as cancer and other neoplasms, especially in the late childbearing years and at or after the menopause. There are no data to indicate that amenorrhea, menorrhagia or metrorrhagia results from employment or comes about because of injury or industrial accident. Each patient should be promptly referred to her physician or obstetrician and gynecologist for appropriate diagnosis and therapy.

C. *Dysmenorrhea.*—Dysmenorrhea is a problem in industry, for it causes a certain amount of absenteeism with some women. As a rule, each industrial organization has developed its own method of caring for women who develop symptoms while at work. Most plants are trying means to keep the employee on the job. The Committee on Health of Women in Industry [2] reported that:

> Many women have little or no incapacitation during menstruation. Those with mild distress may be benefited by dietary improvement, by the avoidance of unnecessary physical and strenuous activities for a few days prior to the expected period or by the administration of mild sedatives and analgesics under the direction of the plant physician or the employee's personal physician.
>
> Severe cases of dysmenorrhea may require the attention of the specialist. Dysmenorrhea is a symptom and results from many conditions such as pelvic inflammatory states, endometriosis, pelvic neoplasms, cervical stenosis, maladjustments, hormonal imbalance, migraine and allergic states. Adequate rest facilities at the plant are desirable, and a brief rest may cause only a slight interruption in the day's work rather than a loss of several hours. Hot applications to the lower abdomen or back may be helpful. Stimulants, as coffee, tea or other hot drinks, are sometimes beneficial.

Hundley, Krantz and Hibbitts [6] claim that secondary dysmenorrhea offers little difficulty for it can be easily eradicated, but that primary dysmenorrhea presents many problems demanding thorough study before treatment is instituted. They continue with the thought that no panacea has yet been discovered. Browne [7]

2. Hesseltine, H. C.; Burnell, Max; Litzenberg, J. C.; Schauffler, G. C.; Seibels, R. E.; Phaneuf, L. E., and Williams, P. F.: Women in Industry: Preliminary Report of Committee on Health of Women in Industry of Section on Obstetrics and Gynecology, J. A. M. A. **121**: 799 (March 13) 1943.

3. Hesseltine, H. C.: Women in Industry—Present and Future Problems, Ohio State M. J. **39**: 545 (June) 1943.

4. Jameson, E. M.: Gynecological and Obstetrical Tuberculosis, Philadelphia, Lea & Febiger, 1935, p. 19.

5. Hesseltine, H. C., and Spear, W. M.: The Significance of Menstrual Disturbance in Pulmonary Tuberculosis, Am. J. Obst. & Gynec. **27**: 32 (Jan.) 1934.

6. Hundley, J. M., Jr.; Krantz, J. C., and Hibbitts, J. T.: Dysmenorrhea, Including Clinical and Pharmacological Studies on Benzedrine Sulfate, M. Clin. North America **23**: 273 (March) 1939.

7. Browne, O'Donel: Ovarian Dysmenorrhea: Its Etiology, Diagnosis and Treatment, J. Obst. & Gynec. Brit. Emp. **46**: 962 (Dec.) 1939.

suggests that 65 per cent of all women between puberty and the menopause suffer from some monthly discomfort. Such suffering might refer to coincidental headaches, mammary engorgement and tenderness, pain in the legs or distress in the lower abdomen or lower back. Those subject to "menstrual" headaches or severe lower abdomen distress will be the major contributors to absenteeism.

Most of the hormones have been used in the treatment of dysmenorrhea. The temporary value and limitations of this therapy have become evident. Balanced reports have come from the pens of Fluhman,[8] Novak,[9] Kurzrok and Birnberg,[10] Sturgis and Meigs,[11] Salmon, Geist and Walter[12] and many others.

Cannon[13] admits that psychologic factors may augment the intensity of dysmenorrhea pain. Meanwhile, Wittkower and Wilson[14] found that as children the dysmenorrhea group showed psychologic maladjustment four times as often as the control group, and as adults the dysmenorrhea patients showed a high excess of two main personality groups. Additional support to the psychogenic factor comes from Boynton and Winther[15] by their therapeutic controls, in which 8 per cent on placebos reported complete relief.

Miller[16] stressed the importance of recognition of overlapping, of predisposing and of causative factors and the need for rational therapy based on a knowledge of fundamental causative factors.

Black,[17] Colcock,[18] Meigs[19] and Marshall and Poppen[20] resorted to presacral neurectomy with good results, but each warns that the need is only for the severely affected but infrequent patients who do not respond to simpler and safer therapies.

It is common knowledge that with general physical and psychologic improvement a considerable percentage of women benefit or are relieved. Thyroid extract should be used only when the basal metabolic test may indicate a hypothyroidism. Thyroid extract may give remarkable improvement to teen age women who have a hypothyroidism. Others may by dietary balance and improvement gain as much relief. Still others may avoid incapacitation through the appropriate dosage of sedatives, as phenobarbital (0.0325 to 0.065 Gm.) once to twice daily, beginning a few days before the expected onset of the catamenia and continued through the period of expected distress. The elimination of undue physical activity with adequate sleep favors normalcy.

Analgesic drugs single or in combination may give some relief but unpredictably so. Antispasmodic (mydriatics included) may eliminate pain caused by spasm. The principle is to correct or alleviate the cause of the dysmenorrhea rather than to treat the symptoms.

The plant may have rest rooms where women who become ill may have a brief rest period. Often a short interval of rest will permit the employee to return to her routine work, thereby contributing to better production and saving the employee loss of pay. Obviously the plant physician may need to give first aid care for those who become ill while at work. Every one knows the importance of keeping people regularly at work as many days as possible.

The extreme shortage of labor has encouraged each industry to consider carefully the problem of dysmenorrhea in its employees. Tuttle[21] has found it expedient to make a thorough pelvic examination and refer to gynecologists those who have repeated attacks of dysmenorrhea. He reduces the absenteeism from dysmenorrhea "largely by checking up on repeaters. . . ." The special attention which the medical department has given to the menstrual irregularities has benefited both the United Air Lines and the employees.

Absenteeism causes concern to the industrial physician because it requires medical attention periodically, to the employer because of interference with production and to the employee because of loss of pay through lost work. From the foregoing it is evident that dysmenorrhea is not an occupational disease and thus belongs to the private physician, either the employee's personal physician or an obstetrician and gynecologist.

Most women subject to menstrual pain can be benefited or relieved by adequate and appropriate therapy. The exact determination of the underlying cause of dysmenorrhea is the first step in the therapy.

MENOPAUSE

The menopause is the physiologic end of reproduction. The transition may be associated with symptoms of variable and even extreme degree. Many, if not most, women go through the menopause peacefully and without distress or annoyance. The latter group experiences little or no reaction in the routine of life. Unfortunately, some women at the climacteric suffer vasomotor and emotional instability. These reactions reveal themselves often under the stress of excitement and maladjustment. The excitement may occur in pastime or recreational activities as well as in necessary daily routines, such as shopping and home work. Many activities commonly indulged in by women may be disturbing at this period of life. Any distracting noises, conflicting personalities, maladjustment and like factors at the plant can activate or accentuate these menopausal symptoms but do not produce the primary condition. Thus, menopausal symptoms are essentially a personal condition and not an industrial malady.

It seems that proper placement is an important phase in keeping the women steadily employed. Reports come out that women in the menopause may and do work very well. Those who were previously employed continue in their regular work. Change or transfer to another type of work appears to be very seldom indicated but may be appropriate occasionally.

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20. Marshall, S. F., and Poppen, J. L.: Presacral Neurectomy in the Treatment of Dysmenorrhea, S. Clin. North American **17**: 927 (June) 1937.
21. Tuttle, A. D.: Unpublished data.

The employee may because of her emotional instability become irritable and thus lessen production. These same women may become provoked, angered or excited more readily than before the onset of the climacteric. Unfortunately, not all women are aware of their unsettled emotional state. Unfortunate also are those who are aware of it but have no control of the situation. These women may be completely relieved by estrogenic replacement. Diethylstilbestrol by mouth is quite efficient, easily taken and economical for the employee. The dosage may vary from 0.5 to 1 mg. daily for several weeks (eight to sixteen) followed by a progressive and graduated reduction but under the direction of the employee's personal physician. Occasionally there may be some vaginal bleeding caused by the withdrawal of the drug. A recurrence of this bleeding should be looked on as a serious symptom, possibly uterine or cervical cancer, until by curettement and biopsy it is excluded. The administration of estrogens before cessation of menstruation may be followed by greatly altered menstrual periods and cycles, and thus estrogens should be withheld until the menstrual periods have vanished. Sedatives, as phenobarbital, may serve better while menstrual periods occur and may be an adjunct to estrogenic replacement subsequently.

Women of the menopausal age may have vaginal wall relaxations and beginning prolapse, and thus their proper placement is particularly desirable. Pelvic examination of those approaching or through the menopause could elicit early vaginal wall relaxation, beginning prolapse and other gynecologic conditions which may become progressively worse.

PREGNANCY

Pregnancy is a biologic and physiologic function of mature women. This function may interfere with normal activity and employment. Many pregnant women work about their homes and in their gardens, but full shift of work at the plant and also as many hours at home work is undesirable and should be avoided. The type of work should be individually considered for each gravid employee. Individualization is often disturbing and confusing in a large industry, but with the cooperation of the employee's physician there should not be great difficulty. The evaluation of type of work must be based on the employee's ability to perform the work with reasonable safety to herself and to the pregnancy. As the pregnancy advances the woman becomes more awkward and hence must be protected more carefully from falls. She should not climb or walk where delicate balance is involved or particular hazards exist. Regular shifts will be conducive to regular rest. Every pregnant employee must be protected particularly from toxic substances.

The employee should consult her own physician or obstetrician early in the pregnancy (within eight to ten weeks from the last menstrual period). The physician should take a complete antepartum history, do a complete physical and pelvic examination and determine the pelvic measurements. A routine urinalysis, a hemoglobin or cell volume determination and a white blood cell count should be completed at the first visit and a serologic test made for syphilis. Other tests should be made when indicated.

The Committee on the Health of Women in Industry [2] urged that "each employee inform the proper authority in the industry about her pregnant state within the first trimester (three months), that she obtain a statement from her physician to the effect (1) that her work is not contraindicated and (2) that she may work not longer than a given period of pregnancy. If contraindications to work arise, the employee's physician should notify the employer.

"The patient should not return to work until six weeks after delivery and then only when her physician notifies the employer that she may return. If her return to work at six weeks is inadvisable because of her own condition or because her baby actually needs her at home, she should request further extension of time."

The committee [2] felt that discontinuance of work in the last trimester or earlier would be desirable but by all means by the thirty-second week of pregnancy.

The antepartum care should be carried out by the employee's own obstetrician, for he is prepared to give antepartum care and he has the responsibility of the parturition. In early and mid pregnancy visits to the obstetrician at three week intervals may be sufficient for normal women. The program will vary with conditions or complications. Any emergency at the plant can and is treated by the plant physician until the private physician can take over.

The American committee approved the plan drafted by Danforth, Kosmak De Normandie and Adair [22] for maternal care. Care of complications must receive special consideration. The management of obstetric hemorrhages, toxemias of pregnancy and puerperal infection has been outlined by Williams, Mussey and Falls respectively.[23]

The Committee on the Health of Women in Industry [2] made special comment, as:

> Unintentional abortion is the most likely obstetric complication in the first trimester of pregnancy and it may have no relationship to the employment. These accidental abortions result perhaps more often from abnormal or diseased ova and not because of work or activity. Excessive vomiting is the second most likely problem in the first trimester.
>
> The last trimester is complicated most often by toxemia of pregnancy, placenta previa or abruptio placentae. All of these obstetric emergencies are incompatible with employment of any kind and need immediate treatment.
>
> The midtrimester is a comparatively safe period, but any complication may arise at this time, as well as any other, such as anemia, hypertension and nephritis, pyelitis, neoplasm (both benign and malignant) and many other conditions.
>
> Other complications will also alter the program. Genital tract infections may require treatment from every two to seven days. Antisyphilitic treatment should be weekly. The management of medical complications will necessitate a specially devised program. In the event of excessive weight gain or evidence of toxemia, special instructions must be given. These are only some of the conditions that the obstetrician may encounter in the care of his patients.

SUMMARY

Women can work efficiently in many industries but, because of physiologic behavior peculiar to them, attention to their peculiarities should reduce the amount of absenteeism and also protect the obstetric and gynecologic health of the individual.

The cause of amenorrhea (gravid and menopausal causes excluded) should be adequately investigated.

Menorrhagia and metrorrhagia should be looked on as a serious sign until such condition as cancer, other neoplasms and other conditions have been eliminated.

Primary dysmenorrhea may require special study. Secondary dysmenorrhea is associated with many conditions and thus its successful therapy will depend on correction of the underlying factors.

22. Adair, F. L.: Maternal Care, Chicago, University of Chicago Press, 1937.
23. Adair, F. L.: Maternal Care Complications, Chicago, University of Chicago Press, Chicago, 1938.

The menopause may be associated with emotional instability.

Pregnancy will require special consideration.

Menstrual abnormalities, the menopause and pregnancy are nonindustrial conditions. These conditions are classified as personal conditions, and thus obstetric and gynecologic care should be administered by the employee's personal physician.

Private physicians should acquaint themselves about industrial problems in relation to obstetric and gynecologic conditions in order that they may collaborate with industrial physicians in common problems.

Until factual and sufficient data can be procured and published on pregnant states, menopausal symptoms and menstrual abnormalities in relation to employment, directions and recommendations on employment, placement, safeguards, reduction of absenteeism and introduction of health measures will be guided by ideas and opinions.

Some agency, private or governmental, should support studies to supply this badly and urgently needed information. Fair and unbiased observers, committee or commission, could compile and analyze the data. From such a basis the employees would benefit by the gains for their welfare, and the employer should benefit by a reduction of absenteeism. The industrial physician would be aided by specific findings, and the private physician could prescribe more reliably for his employed patients.

APPENDIX

From the Monthly Report on the Labor Force, Department of Commerce, Bureau of Census, Washington, D. C., Dec. 10, 1943, special surveys MRLF, No. 18, the following estimates of female employees are listed:

July 1943, 17,100,000 employed, 600,000 unemployed.
November 1943, 16,000,000 employed, 300,000 unemployed.
December 1943, not yet available.

The difference for the greater number for the summer employment was explained on the basis of the use of the 14 to 19 year olds. Unless an unexpected and sudden rise occurs, the predictions for December 1943 cannot be fulfilled.

5848 Drexel Avenue.

ABSTRACT OF DISCUSSION

DR. GOODRICH C. SCHAUFFLER, Portland, Ore.: Dr. Hesseltine merely mentions the matter of preemployment physical examination and health follow-up and leaves us with the inference that it is the more or less universal practice. This is not the case, particularly in so-called mushroom war industries in the Western area. Pressure could be put on laggard industries to install such systems. Well integrated programs in operation have proved their value. Basic thinking in the matter involves, first, the creation of a central committee endowed by funds from all contingent organizations and vested with authority to act.

DR. GEORGE W. KOSMAK, New York: It is evident that the physiologic status of women must be given definite thought and consideration when compared with that of men, and social responsibilities likewise cannot be neglected. This phase has not been accorded sufficient importance in the general desire for developing more manual power in the nation and in the opportunities opened up for more gainful employment. No matter how great the endeavor may be to place men and women on the same plane, politically and economically, there still remain those anatomic and physiologic differences in the sexes which cannot be eliminated entirely. This is evident from the proposals suggested in Dr. Hesseltine's paper for the special handling of the medical problems arising from the wider employment of women in various, particularly wartime, industries. Such admissions show the need of a changed approach to a subject which in the course of time may bring about conditions that do not compensate for immediate economic advantages which may have resulted. Hitherto women in industrial occupations have not been subjected to the same stresses and strain, and their labor has been adjusted to what it was believed they could do within their physical limitation. Now they are being required to do heavy and more hazardous work as generally understood and on a plane with men, and with equal pay. For the mutual protection of industry and the women to be employed, and should this necessity for women's work continue, will it not become necessary before employment to devise methods of physical examination to avoid breakdowns? For while immediate demands for her labor may appear primary, the fact cannot be set aside that woman has certain functions which are paramount and which in their widest sense must not be subordinated. If conditions peculiar to the sex are to be determining factors in assuring successful and continuous employment, with lessened absenteeism due to these, may it not be wise to develop standards to provide the means for more extended preliminary physical examinations? Such standards have been worked out by a committee from the New York Academy of Medicine and include a careful history as well as a physical examination of all candidates for employment, particularly in the hazardous occupations. Whether industry as a whole will undertake this precautionary measure to avoid accidents, breakdown or absenteeism remains to be seen. However, as I have also noted, the more extended employment of women has taken from them social responsibilities which it is to be hoped may be restored when demand on their contribution to the war effort has become eliminated with the advent of peace.

DR. J. C. LITZENBERG, Minneapolis: Employment of women in industry presents somewhat different problems from employment of the same women not so employed. This is not only because they belong to the so-called weaker sex and are less robust than men but because they are generally less efficient and employable than men in the heavier industries. Employed women offer other problems because they are potentially childbearing persons subject to gynecologic, menstrual and menopausal disturbances, or they may become pregnant, any of which facts may reduce their efficiency or cause absenteeism or totally incapacitate them. Nevertheless women must be employed in industry to alleviate the manpower deficiency. But it is not as simple as that, for, "man for man," the woman cannot equal her stronger brother except in the not-too-heavy industries. In spite of physical limitations, she has proved surprisingly efficient and valuable in keeping up production, quite as efficient in many types of work as a man. Inevitably, however, these specific problems of women in industry do interfere with production. All out war production is quite as important as all out frontline effort. The latter is impossible without the former. It seems impossible to approach the needed production without the employment of even more women. At the beginning of 1944 it is estimated that 18 million will be employed, of which number 3 million will be in exclusive war industries. Dr. Hesseltine quotes Browne as saying that 65 per cent of women suffer from menstrual discomfort, which may reduce efficiency and be a fruitful source of absenteeism or even incapacitation. One can easily imagine that among so many women much absenteeism will be the result to say nothing of other gynecologic disturbances. Dr. Hesseltine's most constructive suggestion concerns the lack, at present, of exact information about the influence of these specific conditions on women in industry. Much medical information is available about these conditions on women in general, but no adequate data of their influence on industry itself are at hand, such as the amount of absenteeism caused by menstrual irregularities and distress, the menopausal syndrome or pregnancy. Until factual and sufficient data can be procured on the effects of pregnancy, menstrual abnormalities and menopausal symptoms in relation to employment, safeguards and reduction of absenteeism, the introduction of health measures will still be guided by ideas and opinions rather than by data supported by scientific conclusions.

THE USE OF BASAL TEMPERATURE GRAPHS IN DETERMINING THE DATE OF OVULATION

PENDLETON TOMPKINS, M.D.
PHILADELPHIA

A simple method for determining the time of ovulation has been discovered but unfortunately has not been brought to the attention of clinicians at large. It is based on variations in body temperature during phases of the menstrual cycle. My purpose in this presentation is to describe the technic of securing graphic records of daily basal temperatures, to discuss the interpretation of these records and to demonstrate their usefulness in indicating the date of ovulation by showing graphs submitted by patients under treatment at the present time.

In 1904 van de Velde [1] discussed the variations in body temperature during phases of the menstrual cycle. Since that time at least a score of excellent papers have dealt with the subject, particular emphasis being placed on the correlation of temperature changes and ovulation. Barton [2] gave a historical review and correlated temperature and electrical potential variations due to ovulation. D'Amour [3] compared temperature records with other methods of determining ovulation time. Martin [4] has shown an accurate correlation between phases of the endometrium and the temperature curve. Greulich and Morris [5] made a convincing clinical test of the accuracy of temperature records as an indication of ovulation. Laparotomies were performed on 14 patients whose temperature records were available. In 8 cases ovulation was expected, in 6 it was not. Inspection of the ovaries at laparotomy confirmed the prediction in every case. Harvey and Crockett [6] presented temperature records of 1 patient over a thirteen month period and gave an involved mathematical analysis of the variations observed. Lyon [7] discussed the evaluation of dysmenorrhea by temperature records. Mocquot and Palmer [8] reported the effect of endocrine therapy on basal temperature. Palmer and Devillers,[9] Williams [10] and Allan Palmer [11] illustrated their reports with graphs similar to those presented here. Rubenstein [12] is the most enthusiastic American investigator. Zuck [13] and Williams and Simmons,[14] among others, have made clinical use of the method. Barton [2] and Vollmann [15] furnish extensive bibliographies.

All this literature may be summed up thus: A record of body temperatures taken daily under standard conditions shows a typical curve during the menstrual cycle. The temperature is relatively low during the first part of the month, drops to a minimum about the time that ovulation occurs and rises definitely thereafter to a relatively high level, which is maintained until the next menses, when the temperature drops abruptly. Before the menarche, after the menopause, and in men, similar temperature fluctuations are not found. If conception occurs, the temperature will remain at the high postovulation level. The important feature is the rapid rise in temperature at ovulation. Many clinicians attest the practical accuracy of this fact; several laboratory minded writers question it. The remarkable observation is not that temperature records sometimes fail to indicate ovulation but that they ever indicate it. The method is so simple, so inexpensive and so helpful that the utmost use should be made of it. When temperature graphs are used in the study of sterility it is taken for granted that all other well known investigations, such as sperm counts, tubal insufflation and basal metabolism tests, are carried on as usual. The basal

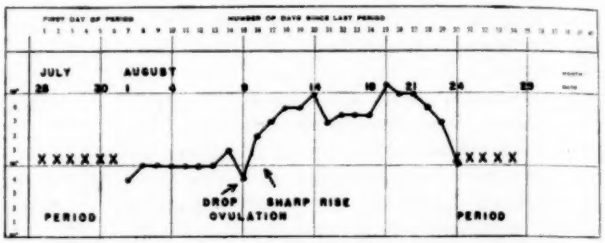

Chart 1.—An ideal temperature graph submitted by a patient. The cycle was 30/5-6. Note (1) the relatively low temperature prior to ovulation, (2) the slight drop on August 9, which occurs at ovulation, (3) the sharp rise following ovulation, (4) the relatively high level after ovulation and (5) the sharp drop when menstruation begins. The temperatures shown are exactly those submitted by the patient but have been regraphed and annotated for publication.

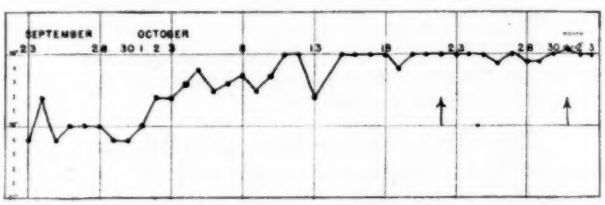

Chart 2.—Use of the temperature graph in sterility studies on a patient with very irregular menses. The patient, aged 22, was married in 1940 and had not conceived probably because her husand was at sea much of the time. Menstruation had occurred on May 11, 1943, June 21, July 16, August 15 and September 7. She first consulted me on September 20. It appeared that the chief problem was to select the fertile period, a problem which could not be solved simply by using the calendar because the intermenstrual interval varied from three to six weeks. Accordingly a temperature graph was started. As shown, the rising temperature on October 2 suggested ovulation, and coitus was advised. On October 22 the patient reported by telephone that the graph showed a sustained high temperature. A tentative diagnosis of pregnancy was made (first arrow). Pelvic examination on October 25 was indeterminate. On November 1 the Friedman test was reported positive (second arrow), and pregnancy has since proceeded uneventfully.

From the Philadelphia Lying-In and Maternity Department of the Pennsylvania Hospital.

1. van de Velde, T. H.: Ueber den Zusammenhang zwischen Ovarialfunction, Wellenbewegung, und Menstrualblutung, Haarlem, F. Bohn, 1904.
2. Barton, Dorothy Smith: Study of Temperature and Electric Potentials in Menstrual Cycle, Yale J. Biol. & Med. **12:** 503-523 (May) 1940.
3. D'Amour, F. E.: Comparison of Methods Used in Determining Time of Ovulation, J. Clin. Endocrinol. **3:** 41-48 (Jan.) 1943.
4. Martin, Purvis L.: Detection of Ovulation by the Basal Temperature Curve with Correlating Endometrial Studies, Am. J. Obst. & Gynec. **46:** 53-62 (July) 1943.
5. Greulich, Walter, and Morris, Edward S.: An Attempt to Determine the Value of Morning Rectal Temperature as an Indication of Ovulation in Women, Anat. Rec. **79:** 27 (March) 1941.
6. Harvey, O. L., and Crockett, Hazel E.: Individual Differences in Temperature Changes of Women During the Course of the Menstrual Cycle, Human Biol. **4:** 453-468 (Dec.) 1932.
7. Lyon, R. A.: Evaluation of Dysmenorrhea by Basal Body Temperature, Surg., Gynec. & Obst. **76:** 729-731 (June) 1943.
8. Mocquot, P., and Palmer, R.: Body Temperature Curve Under Influence of Sex Hormones and in Menstrual Disorders, Presse méd. **48:** 305-307 (March) 1940.
9. Palmer, Raoul, and Devillers, Juliette: Ovarian Cycle and Temperature Curve, Compt. rend. Soc. franç. de gynéc. **9:** 60-69 (Feb.) 1939.
10. Williams, W. W.: The Basal Metabolic Rate, Basal Body Temperature and the Ovarian Cycle, Am. J. Obst. & Gynec. **46:** 662-667 (Nov.) 1943.
11. Palmer, Allan: Basal Temperature in Disorders of Ovarian Function and Pregnancy, Surg., Gynec. & Obst. **75:** 768-778 (Dec.) 1942.
12. Rubenstein, Boris B.: Functional Sterility in Women, Ohio State M. J. **35:** 1066-1068 (Oct.) 1939; Vaginal Smear, Basal Body Temperature Technic and Its Application to Study of Functional Sterility in Women, Endocrinology **27:** 843-856 (Dec.) 1940. Rubenstein, B. B., and Lindley, D. B.: Relation Between Human Vaginal Smears and Body Temperatures, Proc. Soc. Exper. Biol. & Med. **35:** 618-619 (Jan.) 1937.
13. Zuck, Theodore T.: The Time of Fertility and Sterility During the Human Menstrual Cycle, Ohio State M. J. **35:** 1200-1203 (Nov.) 1939; Relation of Basal Body Temperature to Fertility and Sterility in Women, Am. J. Obst. & Gynec. **36:** 998-1005 (Dec.) 1938.
14. Williams, W. W., and Simmons, F. A.: The Clinical Approach to the Diagnosis of Sterility, Urol. & Cutan. Rev. **46:** 558-570 (Sept.) 1942.
15. Vollmann, Ursula: Body Temperature and Correlation to Phases of Genital Cycle of Woman, Monatschr. f. Geburtsh. u. Gynäk. **111:** 121-153, 1940.

temperature record is not a substitute for any other commonly performed study: it is an adjunct.

In order to secure good records I have found it most helpful to have 8½ by 11 inch forms printed on grid paper. Two sheets are furnished each patient. One blank form is for the patient's use in drawing a graph;

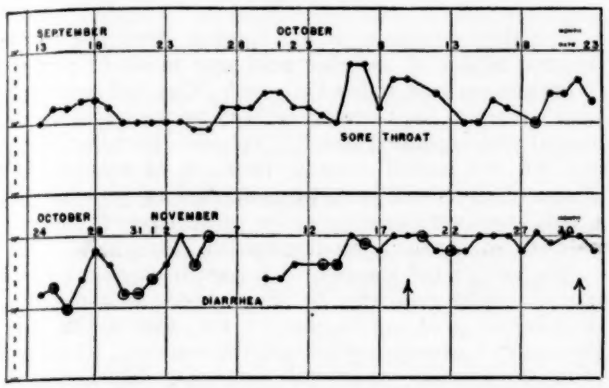

Chart 3.—Use of temperature graphs in sterility study of a patient with amenorrhea attributed to premenopausal changes. The patient was a nulligravida aged 42, married in March 1943. Menstruation had occurred "regularly every month" previous to 1943. The last periods were dated December 1942, March 9, 1943, May 25 and July 15. At the first consultation on Sept. 9, 1943 it appeared that the problem was to detect and take advantage of any subsequent ovulation which might occur. Both the patient and I felt that the menopause was beginning. The temperature graph shown here was commenced on September 13. No variations in temperature which suggested ovulation occurred until late October, nor did menstruation develop. On September 15 and again on October 15 a thin stain appeared, but this seemed at the time to be due to coital trauma rather than to menstruation. I believe the question cannot be answered with certainty. Since the graph for the first thirty-five days showed no temperature rise which could be construed as indicating ovulation, the patient was instructed to have intercourse when the temperature reached its lowest point and to record the fact by encircling the temperature notation. This she did, beginning October 19. Study of the graph reveals an interest in recreation as well as in procreation. However that may be, the sustained high temperature on November 19 (first arrow) suggested that conception had occurred. Pelvic examination on November 23 was indeterminate, but the Friedman test was positive on December 1 (second arrow). Pregnancy is proceeding normally.

the other sheet contains instructions and, on the reverse, an example of a properly drawn graph. These forms have provided excellent records which are easily read both by the physician and by the patient. Moreover, they have increased the patient's understanding of the problem and aroused her interest in it. I strongly recommend the use of forms.[16] In this work it is essential to secure good graphs, and these are not forthcoming until the patient has a clear idea of what is wanted, and why. It will not suffice for the physician

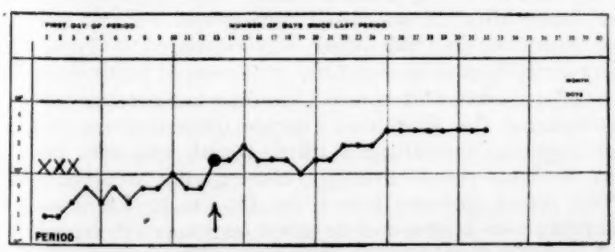

Chart 4.—Successful artificial insemination timed by the graphic method. Periods very regular, twenty-eight to thirty days. Artificial insemination had been unsuccessfully attempted on two previous occasions on the 14th day before the expected period. As the graph shows, fruitful insemination (arrow) occurred fifteen to seventeen days before the period was due. Note the sustained elevation of temperature, which is typical of early pregnancy. Pregnancy has progressed to the fifth month uneventfully.

to instruct the patient orally or to tell her to "write down the temperature every day" or to "draw a graph." A list of figures is not sufficiently meaningful to patient

16. A limited number are available on request.

or doctor; from the practical standpoint it is essential to plot the data as a graph. Further, the graph must be planned so that the temperature variations are readily apparent. Before proper forms were printed, patients would present neat graphs plotted precisely but showing the temperature curve as an almost straight line or sometimes as an apparently hectic fever. Not until I had laboriously rescaled and replotted such a graph could it be read. The whole purpose of this report is to show how simple it is to secure and read temperature graphs, and the secret of the method (which is no secret) is to give the patient proper graph paper forms and complete written instructions. The instructions to the patient follow; remarks contained in the brackets do not appear on the sheet which the patient receives:

Conception is most likely to occur if intercourse takes place at approximately the time when the ovum is released from the ovary (ovulation). In most women ovulation occurs about fourteen days before menstruation, but this may not always be the case. It is particularly difficult for patients whose menstrual interval varies considerably from month to month to calculate the date of ovulation. Fortunately it is often possible to determine the probable time of ovulation (and hence the time when intercourse is most likely to result in conception) by a simple method.

Theoretically the normal temperature of a healthy person is 98.6 F. Actually there are continual slight variations from this figure. It has been found that woman's temperature is

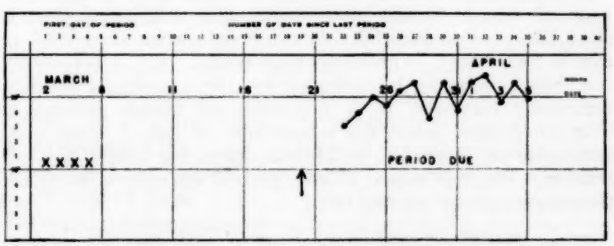

Chart 5.—Use of temperature records as an aid in the early diagnosis of pregnancy. The patient, a nulligravida aged 24, had been studied and treated by Dr. Douglas Krumbhaar of Boston because of sterility. When she moved to Philadelphia in March 1943 Dr. Krumbhaar requested that an endometrial biopsy be taken in the last week of the menstrual month. The cycle was 24/5. Since the previous periods occurred on February 4 and March 2, and the next period was expected March 26, the patient reported for biopsy on March 20 (arrow). I thought she might already be pregnant and by telephone obtained Dr. Krumbhaar's consent to deferment of the biopsy. The patient began a graph, which promptly revealed the high temperature level typical of pregnancy. The tentative diagnosis of pregnancy was confirmed when the period was missed. Allowing for the twenty-four day cycle, term was calculated as December 5. The patient was delivered uneventfully by Dr. Krumbhaar on Nov. 28, 1943.

lower during the first part of the menstrual month than it is during the last weeks of the month, and further, that the transition from a low level to a higher level occurs about the time of ovulation. It is therefore possible by keeping a graphic record of the body temperature to identify, in many cases, the date of ovulation. The variation in temperature is slight, only a few fifths of a degree, so it is essential that the temperature be taken with the utmost practical accuracy. In utilizing the temperature method for determining the date of ovulation the following rules are to be observed:

1. Take the temperature rectally with a blunt tip rectal thermometer for five minutes by the clock immediately after waking in the morning and before arising, eating, drinking or smoking (!). [Some investigators advise that the temperature be taken at the same hour each morning. I myself would prefer to have the temperature recorded when the patient wakes up in the belief that a more significant figure is recorded at 10 a. m. on a Sunday morning after a gay evening than at 7 a. m. when the patient has only had three or four hours' sleep.]

2. Note the temperature immediately by a dot on the graph. If the temperature so recorded differs much from previous readings, and particularly if it is lower than previous readings, the thermometer should be shaken down and reinserted for an additional five minutes by the clock and the reading checked before it is recorded permanently.

3. Any recognized cause for temperature variation should be noted on the chart, for example, a cold, grip, indigestion or even a hangover.

4. Some women can detect ovulation by noting a twinge of pain low on one side of the abdomen. Others have a drop or two of vaginal bleeding at the time of ovulation. If either of these manifestations is present, note it on the chart on the day of occurrence.

5. Chart the temperature by means of a small dot. If intercourse has taken place in the previous twenty-four hours, encircle the dot.

6. It is not essential to take the temperature during menstruation. Mark the first day of menstruation at the extreme left of the chart and commence a new graph when the flow has diminished. [In general I have not found it necessary to secure the temperature during menstruation, although potentiometer studies are reported to have shown that ovulation may occur during menstruation. If the graph gives no indication of ovulation between periods, then of course it would be wise to secure the temperature during every day of the month.]

7. It is necessary to continue the graph for at least two menstrual months before it is of much value. After this time it is usually possible to predict when the temperature will rise (ovulation). Sexual abstinence for several days before ovulation allows time for the male to store up sperm and probably increases the chance of fertilization.

8. If the temperature shows a rise of 2 or 3 fifths of a degree, and if this rise corresponds with a similar rise in the previous menstrual month and is not due to illness, then it can be assumed that ovulation is occurring and that intercourse is most likely to be fruitful. Intercourse oftener than once in twenty-four hours is probably unnecessary. [It is supposedly true that ovulation is indicated by the lowest temperature recorded. However, it is impossible to advise patients to have intercourse when the temperature is lowest, since it is impossible to determine in advance when the lowest point is reached. For this reason I have advised intercourse when the temperature shows a rapid rise.]

The accompanying charts show the sort of graphs drawn by patients, and the value of the graph is explained in each instance.

I believe that basal body temperature graphs very often indicate the date of ovulation. These graphs have been useful to me in suggesting to childless couples the time of maximum fertility, in determining the date for endometrial biopsies and in setting the date for artificial insemination in 2 cases, both of which were successful after previous failures. The graphs may also be used to detect the "unsafe period" for those who do not use contraceptive measures. In several cases an early correct "diagnosis" of pregnancy has been made before the pelvic findings or the Friedman test was positive. The method may be put to many other uses; for example, it should be helpful to investigators searching for very early ova.

In reviewing the literature I was struck by the fact that no one denies the usefulness of graphic temperature records. The method is doubted, but apparently without a fair trial. There is criticism on the grounds that the record of temperatures will not be accurate (but it is accurate enough to be useful) or that it is troublesome to secure (but nothing is too much trouble for the woman who wants a child) or that it is not as precise as hormone assays (but how much less expensive) or that electrical methods are more scientific (how many clinicians own potentiometers?[17] All of us have thermometers). In short, the method deserves more general use.

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17. Detecting the Exact Time of Ovulation by Ovulation Potentials, editorial, J. A. M. A. **124**: 298 (Jan. 29) 1944.

THE DIURETIC EFFECT OF ASCORBIC ACID

PRELIMINARY REPORT ON ITS USE IN CARDIAC DECOMPENSATION

CARL F. SHAFFER, M.D.
OMAHA

The first reference in the English literature to the diuretic action of ascorbic acid was made in a study of normal persons without edema.[1] This had previously been described by German authors in the experimental animal and explained as a "polyphasic effect of ascorbic acid on the colloid osmotic pressure of the blood."[2] These observations have been applied to persons with edema from various causes; the present report concerns patients in cardiac decompensation.

The nutritional status of a person in respect to vitamin C can be estimated by his response to a test dose of ascorbic acid. The size of the dose varies with the route of administration, and the response, or amount of renal excretion, varies with the tissue vitamin content. If this substance is given by mouth there is almost complete absorption and the maximum rate of excretion normally occurs in three to six hours; if given by vein the maximum excretion is in one to two hours.[3] Using either method, the rate varies inversely with the extent of tissue concentration.

It has been demonstrated that, regardless of the state of vitamin C reserve, a person can be saturated by a peroral dose of 3 Gm. of ascorbic acid in six days.[4] The diuretic action corresponds to the period of saturation. This is usually on the third or fourth day if there is a normal reserve.[5] If given parenterally, depending on the size of the intravenous dose, a person can be saturated in shorter time. But in this instance there is no appreciable diuretic effect, possibly because of too rapid excretion of ascorbic acid.[6]

CLINICAL STUDY

A series of 10 patients with peripheral edema were given a daily supplemental dose of 500 mg. of ascorbic acid by mouth in divided quantity.[7] There were 5 men and 5 women, with an age distribution of 20 to 60 years, representing the common etiologic types of cardiac decompensation. Each patient remained in bed, received a standard hospital diet with a measured vitamin C content (50 mg. a day) and had a relatively stable fluid balance for three days prior to giving ascorbic acid. All were receiving a maintenance dose of digitalis, and no other diuretic was used during the six day period of study. The fluid intake was regulated at 1,500 cc. in twenty-four hours, and the urine output was recorded.

All patients had a small diuresis as determined by comparing the three day average output at the height of response (usually the third, fourth and fifth days) to the same period average before giving ascorbic acid. The actual increase was from 250 cc. to 1,000 cc. in seventy-two hours, not as great as expected, based on observations of normal subjects. The results corre-

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sponded in general to those reported by Evans [8] in a similar series of patients. He concluded that ascorbic acid was a more effective diuretic than digitalis but less effective than the adjuvant diuretics commonly used.

Another 10 patients with edema were given a daily supplement of 500 mg. up to 3 Gm. by vein, using the same control procedure, without appreciable diuresis.

The remaining alternative was to give a combination of diuretics. Since, as a whole, the mercurials are most effective for the release of edema of cardiac origin, ascorbic acid was added to mercupurin (500 mg. to 2 cc.). Each of this series of 20 patients had received at least one injection of mercupurin before being given the combination.

Three fourths, or 15 patients, had a relatively large diuresis of from one-half to two and one-half times greater than when mercupurin was used alone, as determined by comparing the first day output in each instance. The actual increase was from 500 cc. to 2,000 cc. in twenty-four hours. A smaller output was noted in 5 patients. In 2 of these mercupurin by itself had caused no significant diuresis, and 2 others had previously received supplemental vitamin C by mouth. It was noted that in patients wherein edema reaccumulated there was a progressively smaller response to injection of the combination at regular three day intervals. This was due in major part to a decreasing amount of fluid available for release and probably in part to increasing tissue saturation with vitamin C.

COMMENT

In animal experiments the blood colloid osmotic pressure determined by Govaerts' method subsequent to injection of ascorbic acid was usually increased but occasionally decreased or unaltered. Repeated daily injection caused a total increase but no cumulative effect. From these results it was concluded that this substance influenced osmotic pressure by a polyphasic mechanism.[2]

In additional experiments the blood plasma carbon dioxide combining power subsequent to injection was uniformly increased.[9] This observation, also made in both of my series of patients experiencing a diuresis, is in direct contradistinction to an effect that acid-producing salts have in potentiating the mercurial diuretics.

SUMMARY

Ascorbic acid given by mouth resulted in a small diuresis in 10 patients with cardiac decompensation. When given by vein there was no appreciable similar effect. In combination with mercupurin there was a relatively large diuresis of from one-half to two and one-half times greater than with mercupurin alone.

The diuresis caused by ascorbic acid, based on studies in the experimental animal, is believed due to altered colloid osmotic pressure. It is not due to production of acidosis.

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HEALTH HAZARDS ENCOUNTERED IN THE MANUFACTURE OF SYNTHETIC RUBBER

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The manufacture of synthetic rubber involves several chemical compounds which are toxic to man. A summary of the health hazards involved in the manufacturing process is warranted, as great quantities of synthetic material are being made.

This paper deals with experiences encountered in the manufacture of certain types of synthetic rubber. Sufficient time has not elapsed to enable these observations to be supported by comprehensive figures.

The principal chemicals used in the manufacture of synthetic rubber are (1) butadiene, which is also known as methyl allene and has a chemical formula of $CH_2:CHCH:CH_3$, (2) styrene, also known as vinyl benzene, having the chemical formula $CH:CH_2$, and (3) acrylonitrile, or acrylonitryl-vinyl cyanide, which has a chemical formula of $CH_2:CH\text{-}CN$. In addition to these chemicals, polymerization catalysts such as hydrogen peroxide, sodium perborate, ammonium persulfate or organic peroxides or peracids and modifying agents—such as carbon tetrachloride, hexachloroethane, organic halogen compounds, trichloropropionitrile, sodium cyanide, mercaptans, xanthogen disulfides, thiuram disulfides and sulfinic acid are used. The chemistry of these groups of compounds has been fairly well described by various authors and will not be discussed here, since we are primarily interested in the hazards encountered in handling them.

I observed that workmen exposed to butadiene vapors complained of irritation of the eyes, nasal passages, throat and lungs. In some instances coughing was produced. A sense of fatigue and drowsiness developed in some. In all cases these symptoms disappeared on removal from the fumes. Subsequent exposures caused the same symptoms, but these did not appear to be exaggerated, indicating no cumulative action. All workmen who complained of symptoms were immediately examined. Physical examinations, including chest x-ray examinations, blood examinations and urinalyses, were all negative. Follow-up examinations were also negative. No skin effects were noted. No workmen were exposed to heavy concentrations of the fumes.

Styrene, because its chemical structure is similar to toluene, was primarily considered to be as toxic as toluene. This did not prove to be the case.

No workmen in my experience were exposed to concentrations of styrene over 500 parts per million. The presenting symptoms were irritation of the nose, throat and lungs. Coughing occurred in some cases. A mild conjunctivitis appeared in some cases. A feeling of lassitude and fatigue occurred in all cases. In several cases in which the skin came into contact with styrene, the skin was rough, dry and cracked. This was probably due to the styrene dissolving the natural oils of the skin.

Whenever workmen were exposed to styrene fumes and complained of toxic effects they were sent to the hospital for examination. In addition to a complete physical examination they also received a complete blood count, urinalysis and a chest x-ray examination.

Fifth Service Command, Fort Hayes, Columbus 18, Ohio

At no time was any pathologic condition noted. Some of these workmen were observed for over a period of at least one year, and no chronic or cumulative effects were noted.

Liver or kidney damage might be expected to occur following exposure to high concentrations of styrene vapors. No pathologic change of this type was seen.

Acronitrile, because it contains vinyl cyanide and liberates hydrogen cyanide, is definitely a source of danger. It presents definite hazards of vapor toxicity and of toxic absorption. Every care was taken to prevent human exposure. In spite of all precautions, some workmen were exposed to mild concentrations. These workmen presented symptoms of nausea, vomiting and weakness. Headache, fatigue and diarrhea also occurred in some. All complained of nasal irritation and an "oppressive feeling" in the upper respiratory passages.

In several cases a mild jaundice appeared which lasted for several days. In 1 case severe jaundice appeared which did not disappear until four weeks had elapsed. The jaundice was accompanied by varying degrees of headache, prostration, nausea, vomiting, diarrhea and tenderness in the abdomen. In the mild cases without jaundice no physical signs were noted except occasional liver tenderness. All types of laboratory examinations were negative. In the more severe cases, that is, those in which jaundice was present, the blood icterus index varied with the degree of jaundice. Usually a low grade anemia appeared with the hemoglobin averaging 13 Gm. per hundred cubic centimeters of blood, the red blood cell count averaging 4,000,000 per cubic millimeter and the white blood cell count being slightly elevated, averaging 12,000 per cubic millimeter. The differential count was usually normal. Urinalysis was usually normal except for an increased bile content. Stools were light in color. With treatment all cases returned to normal with the exception of the case of severe jaundice. In this case, after one year's time, lassitude and fatigue were still complained of, although no pathologic physical signs remained.

Fortunately no fatal cases occurred. This was probably due to the extreme care used in the handling of the chemical, thus avoiding lethal concentrations of the compound. As already stated, there is no question that sufficient exposure either to the vapor or through skin absorption would cause death.

The toxicity of the other chemicals used in the compounding of synthetic rubber is sufficiently known not to warrant their discussion here. Suffice it to say that they do possess toxic qualities sufficient to be a health hazard in themselves.

Several workmen permitted several types of synthetic elastic to be placed on their skin for a period of seven days. No reactions occurred.

TREATMENT

Exposure to any one of the aforementioned compounds is a serious thing. During the process of combination they still retain and perhaps enhance their toxic properties. As a matter of fact, most of the patients could easily have had exposure to several of the compounds simultaneously. Therefore all workmen were given a complete physical examination whenever one presented himself to the hospital. It was made a standard rule for all supervisors to send all exposed workmen to the hospital immediately. A complete laboratory examination was made, including a complete blood count, a blood icterus index and a urinalysis. Chest x-ray examinations were also made routinely. If any pathologic change was noted the employee was immediately hospitalized. In any event he was sent home and not permitted to return to work until several days had elapsed, during which time he was kept under observation with repeated physical and laboratory examinations. Treatment was entirely symptomatic. Lacrimal irrigations, liquid petrolatum instillations in the nasal passages and small doses of acetylsalicylic acid for discomfort were given. Rest and fresh air were prescribed to all. A light diet was recommended. All of the jaundiced employees were hospitalized, and they were given intravenously 1,000 cc. of 5 per cent dextrose solution daily. Liquids were forced. Liver and iron was given, 12 capsules daily. A multiple vitamin capsule was given three times daily. The liver and iron and vitamin capsules were continued for several months after the patient became ambulatory. Length of bed rest varied from three to ten days. All patients were kept in bed until the jaundice and abdominal tenderness disappeared.

PRECAUTIONS

In my opinion the following general precautions should be observed in all plants manufacturing synthetic rubber:

1. A complete preemployment physical examination for all workmen including a complete blood count, urinalysis, blood icterus index, blood Kahn or Wassermann test and a chest x-ray examination. Evidence of chest, liver or kidney disease, syphilis or pregnancy should preclude employment.

2. All operating personnel should be examined every three months, this examination to include a complete blood count, urinalysis, blood icterus index and a chest x-ray examination. Evidence of organic pathologic change should be reason for immediate removal from the job.

3. All operating personnel should be impressed with the toxic hazards of the various compounds and taught to handle them properly.

4. A closed type of operation should be made mandatory. Continuous inspection of all equipment for possible leaks should be enforced.

5. A set of safety rules regarding the use of protective equipment (gloves, goggles, masks) should be posted at the danger spots.

6. Both personal and group safety equipment should be supplied as needed.

7. Adequate ventilation, both local and general, should be maintained at all times.

SUMMARY

1. Butadiene is a light narcotic poison with no apparent danger to light exposures.

2. Styrene is to be considered as a toxic compound. Mild exposures do not produce any pathologic effects. Heavy exposures may cause permanent damage, but so far this has not occurred.

3. Acrylonitrile is extremely toxic both from vapor toxicity and from toxic absorption. Even mild exposures are dangerous.

4. Other compounds used in the manufacture of synthetic rubber are to be considered to be toxic and precautions taken in their handling.

5. Treatment of exposed cases is chiefly symptomatic.

6. All operating personnel should receive thorough preemployment examination and a complete periodic check-up every three months.

7. Adequate ventilation is to be supplied at all times.

8. Constant inspection of all equipment should be maintained.

9. Personal and group safety equipment should be supplied and their use enforced.

Clinical Notes, Suggestions and New Instruments

MENINGOCOCCIC CONJUNCTIVITIS

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When gram negative intracellular and extracellular diplococci are demonstrated in a smear from the conjunctiva showing purulent conjunctivitis, the presumptive diagnosis of gonorrheal ophthalmia is almost universally made. Except in rare cases it has not been considered necessary to make detailed bacteriologic or serologic studies of the organisms found. This attitude may have been due in the past to difficulties in culturing the neisserian organisms and in their serologic identification. This is no longer a legitimate excuse, since in recent years cultural and serologic identification of these organisms has become quite a simple matter.

The case that brought to our attention the necessity of doing such studies was that of a 2 year old child who was brought to the Station Hospital on Dec. 6, 1943 because of a purulent conjunctivitis of the right eye. He was taken immediately to the laboratory and a smear was made on the exudate from the conjunctiva. It showed the presence of numerous intracellular and extracellular gram negative diplococci. Because of this report and the intense conjunctivitis, with the sac full of pus, the Eye Service advised admission to the hospital for adequate therapy. The child was accordingly admitted to the Contagious Disease Service.

The history, obtained from the mother, revealed the fact that the child had coryza on December 4. On the morning of December 5 it was noticed that his right eye had become inflamed. This condition grew worse, and frank pus oozed from the conjunctiva that afternoon. His admission to the hospital was advised on the morning of December 6. Examination was completely negative except for a temperature of 99.6 F. and the presence of a purulent conjunctivitis of the right eye. Because of the laboratory report he was placed on sulfathiazole by mouth and irrigations of the conjunctival sac with boric acid solution. At the start it was necessary to irrigate the eye about every fifteen minutes to remove the exudate, but the time interval was soon increased.

The laboratory, in the meantime, had made a culture by rubbing the fresh swab of exudate on the surface of a "chocolate" agar plate, as previously described by one of us.[1] The following day the abundant growth of "oxydase positive" gram negative diplococci was washed from the chocolate agar plate and typed by the method described by Phair, Smith and Root.[2] The organisms were agglutinated with type I meningococcus antiserum and failed to agglutinate with types II or III meningococcus antiserum or gonococcus antiserum.

This report was telephoned to the ward on December 7, the second hospital day. The eye was much improved, and sulfathiazole therapy was continued. The contemplated search for the source of infection was, however, discontinued. The next day there was no longer any purulent discharge and the child was discharged from the hospital. The highest recorded temperature was 99.6 F. by rectum. At no time was there any evidence of systemic infection.

COMMENT

The finding of Neisseria intracellularis in acute suppurative conjunctivitis in the absence of any clinical signs of meningococcic infection of other tissues seemed to us to be unusual and to have far-reaching possibilities. We looked through three standard textbooks of ophthalmology and found that May's Diseases of the Eye[3] does not mention the meningococci as a cause of conjunctivitis. Parsons[4] merely states that it is sometimes found in the conjunctival sac. Duke-Elder's[5] monumental work has much more on the subject. He mentions a catarrhal conjunctivitis as occurring as an acute metastatic phenomenon of meningococcic infection. He quotes some literature to show that it may occur without general symptoms and that Reese reported a case of meningitis which followed a conjunctival infection. He cites one report in which it caused a pseudomembranous conjunctivitis with corneal ulceration but does not mention whether or not meningitis was associated with it.

A survey of recent literature reveals that meningococcic conjunctivitis associated with infection of other tissues is not uncommon. It is, however, quite rare in the absence of such involvement. Clifton and Laird[6] report 2 cases, in 1 of which a group I meningococcus was proved to be the etiologic agent. In the other, similar proof, cultural and serologic, is lacking, but it is assumed to be identical on the basis of its clinical similarity to the first. These authors in reviewing the literature cite only 3 other cases of meningococcic conjunctivitis in the absence of other symptoms. A fourth case is mentioned by DeBord[7] in a man in which a group I meningococcus was isolated. It is not clear, however, whether other tissues were involved by the meningococcus.

The recent studies on meningococcus "carriers" and their control by Schoenbach[8] and Cheeves, Breese and Upham[9] show the widespread and common occurrence of meningococci in "normal" throats. Duke-Elder[10] mentions the presence of meningococci in the conjunctivas of such carriers. These facts suggest the great possibility for infection of the eye with these organisms and indicates the fallacy of reporting gonococci from smears from acute purulent conjunctivitis without cultural and serologic confirmation. In our hands the use of the chicken serum[2] for such agglutination has been very satisfactory and has led to complete identification within twenty-four hours of the time that the gram negative diplococcus was grown.

The necessity for such identification is quite apparent in those cases in which there is no obvious method of spread of infection as from a urethritis, vaginitis in a child or cervicitis. Before further energy is spent in search for the contact, such identification should be undertaken.

In all the cases that have been adequately described, as well as our own, a respiratory infection was the mode of onset. While this might be a clue, it is at most a very tenuous one. It might, however, help in the type of case mentioned (no obvious source of contamination) to consider the possibility of the meningococcus as the gram negative intracellular diplococcus when it is found.

CONCLUSION

The diagnosis of meningococcic conjunctivitis should be suspected in cases with gram negative intracellular diplococci seen in smears of pus in which no obvious source of the infection is discernible.

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INSULINS AND INSULIN MODIFIERS

INTRADERMAL STUDIES

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In their respective textbooks Joslin,[1] Wilder[2] and Duncan[3] have stated that injections of protamine zinc insulin are more apt to produce cutaneous reactions than regular insulin.

During an experience of seven years we have found that globin insulin (with zinc) has only rarely been followed by cutaneous reactions. Bauman[4] found that several patients who had severe skin reactions after injections of protamine zinc insulin obtained immediate relief when globin insulin (with zinc) was substituted. Duncan[5] replaced protamine zinc insulin with globin insulin (with zinc) in 2 patients and noted a disappearance of the irritation of the skin. In the article published by Bailey and Marble[6] local reactions were not encountered when globin insulin (with zinc) was used.

As the question of sensitivity to insulin is of some practical importance and because we wanted to see if the results of cutaneous tests with uncombined protamine and globin would parallel the clinical experience with the respective insulin combinations, we tested a group of 91 allergic and 81 diabetic nonallergic patients with various insulins and insulin modifiers. All of the diabetic patients had received therapeutic injections of one or more types of insulin.

SOLUTIONS EMPLOYED

Protamine.—The same product as is used in the preparation of protamine zinc insulin was used. It is obtained from the sperm of the fish belonging to the salmonidae family.

Total Globin (beef).—Though globin contains considerable arginin and histidine, it is a neutral protein more like an albumin than a protamine or histone (Bauman[7]). Total globin was prepared from beef hemoglobin according to the method of Anson and Mirsky.[8]

Native Globin Beef.—Native globin was prepared from total globin (beef) by neutralization of its solution with alkali. The denatured globin precipitates, leaving the native globin in solution. Native globin (beef) is used in the preparation of globin insulin (with zinc) (Reiner, Searle and Lang[9]).

Globin (human).—Total globin from human hemoglobin was prepared according to the aforementioned method. Two sources were used and are designated in these studies as globin (human) A and B.

Insulin Beef (market).—Regular insulin, stated to be from beef pancreas, was purchased on the market. It was diluted so that there was 0.01 mg. of nitrogen per cubic centimeter. The average zinc content of regular insulin U-40 varies over a range of about 0.041 to 0.049 mg. per hundred cubic centimeters.[10] This is approximately $\frac{1}{175}$ the amount of zinc present in protamine zinc insulin.

Crystalline Insulin.—We were especially desirous of obtaining an insulin that was as free from zinc as possible; hence the following process was employed. "Wellcome" brand of crystalline insulin was recrystallized once in phosphate buffer with zinc according to Scott and Fisher's method[11] and once from ammonium acetate without the addition of zinc. Then it was dissolved in hydrochloric acid and dialyzed for six days; it was then precipitated at the isoelectric precipitation point and the precipitate dissolved again in hydrochloric acid and dialyzed for two days and finally electrodialyzed until completely precipitated. This was then dissolved in sufficient hydrochloric acid to form a clear solution. Determinations of zinc were carried out according to the method described by the Council on Pharmacy and Chemistry of the American Medical Association[12] and the results were negative.

Insulin (p-azobenzyltrimethylammonium chloride).[13]—This insulin compound was prepared from Wellcome brand crystalline insulin according to the method described by Reiner and Lang.[14] It was crystallized according to the method described by Lang and Reiner,[15] electrodialyzed and reprecipitated.

Insulin (p-azobenzenesulfonic acid).[13]—This insulin compound was prepared from highly purified and zinc free insulin previously described. The dye was prepared according to the method of Reiner and Lang.[14]

Acid Control.—This solution was prepared from potassium acid phosphate and had a p_H similar to that of globin insulin (with zinc), which is about 3.5.

TABLE 1.—*Results of Intradermal Studies on Nondiabetic and on Diabetic Patients Using Various Test Solutions* *

Test Solution (0.01 Mg. N/Cc. 0.02 Ce. Intradermally)	Nondiabetic Patients (91 Patients Tested) Positive Reactions, %	Diabetic Patients Patients Tested, No.	Diabetic Patients Positive Reactions, %
Protamine	48.3	81	18.5
Native globin (beef)	2.1	81	2.4
Globin (human) A	0	81	2.4
Globin (human) B	4.2	81	1.2
Total globin (beef)	1.0	81	1.2
Acid control	6.4	81	1.2
Zinc chloride control	75.6	81	41.9
Insulin beef (market)	3.2	81	24.6
Crystalline insulin (recrystallized, zinc free)	...	62	4.8
Insulin (p-azobenzyltrimethylammonium chloride)[13]	...	61	10.0
Insulin (p-azobenzenesulfonic acid)[13]	...	61	3.0

* Seventy-two of the diabetic patients had had protamine zinc insulin therapy and 33 had had globin insulin therapy previous to the studies of cutaneous reactions.

TABLE 2.—*Comparison of Reactions of Patients Receiving Protamine Zinc Insulin and Globin Insulin with Zinc* *

Test Solution (0.01 Mg. N/Cc. 0.02 Ce. Intradermally)	Protamine Zinc Insulin Patients Tested, No.	Protamine Zinc Insulin Positive Reactions No.	Protamine Zinc Insulin Positive Reactions %	Globin Insulin (With Zinc) Patients Tested No.	Globin Insulin (With Zinc) Positive Reactions No.	Globin Insulin (With Zinc) Positive Reactions %
Protamine	72	14	19.3	33	9	27.5
Native globin (beef)	72	2	2.6	33	1	3.0
Globin (human) A	72	2	2.6	33	2	6.0
Globin (human) B	72	1	1.4	33	1	3.0
Total globin (beef)	72	1	1.4	33	1	3.0
Acid control	72	1	1.4	33	1	3.0
Zinc chloride control	72	29	40.2	33	15	45.4
Insulin beef (market)	72	20	26.3	33	9	27.5
Crystalline insulin (recrystallized, zinc free)	57	3	5.2	29	2	6.9
Insulin (p-azobenzyltrimethyl ammonium chloride)[13]	56	6	10.7	28	1	3.6
Insulin (p-azobenzenesulfonic acid)[13]	56	2	3.5	28	0	0

* In this table the diabetic patients have been divided into two groups, those who received protamine zinc insulin or globin insulin (with zinc) therapy previous to the intradermal studies.

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Dr. Franklin Stevens of the allergy clinic cooperated in this study, and Miss Agnes Shuford, R.N., performed the cutaneous tests.

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Zinc Chloride Control.—This solution contained 0.5 mg. of zinc chloride per cubic centimeter, so that the amount given as a test dose (0.02 cc.) contained 0.0048 mg. (4.8 micrograms) of zinc. This amount of zinc would correspond to the zinc present in 2.4 units of protamine zinc insulin (80 units of protamine zinc insulin contains approximately 0.15 mg. of zinc).

COMMENT

The results of this study are presented in the accompanying tables. Of the preparations tested, zinc chloride, beef insulin and protamine were the most irritating. The incidence of sensitivity to protamine was much greater in the allergic patients. In this group reactions to protamine were twenty-four times more frequent than to globin. In the nonallergic diabetic group the number of reactions to protamine was less, possibly because some of these persons had received injections of protamine zinc insulin and were desensitized. However, here too the ratio of protamine reactions to globin reactions was more than 7.5 to 1.

These results are in keeping with those of the toxicity studies of Reiner, deBeer and Green,[16] who found that globin was devoid of toxicity when injected into animals or tested on tissues or monocellular organisms, whereas protamine was toxic both to tissues and to trypanosomes. The globin and protamine sensitization experiments of Reiner, Searle and Lang indicated that globin and globin insulin (with zinc) were only weakly antigenic, and this observation is confirmed by our experience with human diabetic patients.

The irritating effect of zinc chloride was to be expected. In the diabetic group the frequency of reactions to beef insulin was five times greater than to the purified substance. We are at a loss to explain this result.

CONCLUSIONS

1. Cutaneous reactions to protamine are more frequent than to globin in allergic and in nonallergic patients.
2. Diabetic patients receiving injections of protamine zinc insulin become desensitized to protamine.
3. Diabetic patients to whom globin insulin (with zinc) had been administered daily for about five years were not sensitive to globin.

630 West 168th Street.

16. Reiner, L.; deBeer, E. J., and Green, M.: Toxic Effects of Some Basic Proteins, Proc. Soc. Exper. Biol. & Med. **50**: 70, 1942.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Secretary.

ALLERGENIC PREPARATIONS (See New and Nonofficial Remedies, 1943, p. 29).

The following dosage forms have been accepted:

REICHEL LABORATORIES, INC., KIMBERTON, PA.

Protein Extracts Diagnostic: These extracts for the diagnosis of protein sensitivity by the intracutaneous method are supplied in 1 cc. size cartridge ("Tubex") vials containing sufficient protein material of appropriate dilution for twenty to thirty tests. The test sets are accompanied by a suitable cartridge syringe, sterile needles and three cartridge vials each of epinephrine hydrochloride solution, buffered saline solution and distilled water. After injection of each extract the needle should be flushed with distilled water to avoid contamination with the extract used previously.

Extracts marketed in dilution representing 0.05 mg. of nitrogen per cubic centimeter:

Apple,[2] *Apricot,*[2] *Banana,*[2] *Blackberry,*[2] *Cantaloupe,*[2] *Cherry,*[2] *Dates,*[2] *Fig,*[2] *Grape,*[2] *Grapefruit,*[1] *Lemon,*[1] *Orange,*[1] *Peach,*[2] *Pear,*[2] *Pineapple,*[2] *Plum,*[2] *Prune,*[2] *Raspberry,*[2] *Strawberry,*[2] *Watermelon,*[2] *Beef,*[3] *Chicken,*[3] *Mutton,*[3] *Pork,*[3] *Artichoke,*[2] *Asparagus,*[2] *Beets,*[2] *Broccoli,*[2] *Cabbage,*[2] *Carrot,*[2] *Cauliflower,*[2] *Celery,*[2] *Cucumber,*[2] *Endive,*[2] *Garlic,*[2] *Green Pea,*[2] *Leeks,*[2] *Lentil,*[2] *Lettuce,*[2] *Mushroom,*[2] *Olive,*[2] *Onion,*[2] *Parsley,*[2] *Pepper (Green),*[2] *Potato (Sweet),*[2] *Potato (White),*[2] *Pumpkin,*[2] *Radish,*[2] *Rhubarb,*[2] *Spinach,*[2] *Squash,*[2] *Tomato,*[2] *Turnip,*[2] *Watercress.*[2]

Extracts marketed in dilutions representing 0.01 mg. of nitrogen per cubic centimeter:

Goat Hair,[5] *Wool,*[5] *Chicken Feathers,*[5] *Duck Feathers,*[5] *Goose Feathers,*[5] *Alfalfa (Hay),*[4] *Rice Powder,*[4] *Coffee,*[4] *Tea,*[4] *Bran,*[4] *Corn (Sweet),*[2] *Oats,*[4] *Rice,*[4] *Rye,*[4] *Wheat,*[4] *Milk (Cheeses),*[4] *Lactalbumin,*[6] *Bay Leaves,*[4] *Cinnamon,*[4] *Clove,*[4] *Ginger,*[4] *Nutmeg,*[4] *Thyme,*[4] *Hops,*[4] *Kidney Bean.*[4]

Extracts marketed in dilutions representing 0.005 mg. of nitrogen per cubic centimeter:

Cocoa (Chocolate),[4] *Lima Bean,*[4] *Navy Bean,*[4] *Pea,*[4] *Soy Bean,*[4] *String Bean,*[4] *Brazil Nut,*[4] *Cashew Nut,*[4] *Chestnut,*[4] *Hazel Nut,*[4] *Hickory Nut,*[4] *Pecan,*[4] *Pistachio.*[4]

Extracts marketed in dilutions representing 0.001 mg. of nitrogen per cubic centimeter:

Camel Hair,[5] *Cat Hair,*[5] *Cow Hair,*[5] *Dog Hair,*[5] *Hog Hair,*[5] *Horse Hair,*[5] *Rabbit Hair,*[5] *Silk,*[4] *Cotton Seed,*[4] *Kapok Seed,*[4] *Orris Root,*[4] *Pyrethrum,*[4] *Tobacco,*[4] *Flaxseed,*[4] *Barley,*[4] *Almond,*[4] *Coconut,*[4] *Peanut,*[4] *Walnut (English),*[4] *Bass,*[3] *Bluefish,*[3] *Carp,*[3] *Clam,*[3] *Cod,*[3] *Crab,*[3] *Flounder,*[3] *Haddock,*[3] *Halibut,*[3] *Herring,*[3] *Lobster,*[3] *Mackerel,*[3] *Oyster,*[3] *Perch,*[3] *Pike,*[3] *Salmon,*[3] *Sardine,*[3] *Scallop,*[3] *Shad,*[3] *Shrimp,*[3] *Smelts,*[3] *Sole,*[3] *Trout,*[3] *Tuna,*[3] *Anise Seed,*[4] *Caraway Seed,*[4] *Yeast,*[4] *Orchard Grass,*[4] *Sweet Vernal Grass,*[4] *June Grass,*[4] *Sagebrush,*[4] *Wormwood,*[4] *False Ragweed,*[4] *Western Ragweed,*[4] *Timothy,*[4] *Red-Top,*[4] *Plantain,*[4] *Ragweed,*[4] *Giant Ragweed,*[4] *Cocklebur,*[4] *Bermuda Grass,*[4] *Johnson Grass,*[4] *Russian Thistle,*[4] *Ash (White),*[4] *Ash (Oregon),*[4] *Alder,*[4] *Beech,*[4] *Birch,*[4] *Elm,*[4] *Hickory,*[4] *Maple,*[4] *Oak,*[4] *Poplar,*[4] *Sycamore,*[4] *Walnut,*[4] *Beaver,*[5] *Caracul,*[5] *Ermine,*[5] *Fox,*[5] *Lamb (Black),*[5] *Lamb (Persian),*[5] *Leopard,*[5] *Mink,*[5] *Muskrat,*[5] *Nutria,*[5] *Rabbit,*[5] *Raccoon,*[5] *Skunk,*[5] *Seal,*[5] *Squirrel,*[5] *Weasel.*[5]

Extracts marketed in dilutions representing 0.0005 mg. of nitrogen per cubic centimeter:

Egg (Chicken),[7] *Mustard,*[4] *Glue (Fish).*[10]

Extract marketed in dilutions of 1-10:

House Dust.[8]

Extract marketed in dilutions of 1-100:

Horse Serum.[9]

Protein extracts diagnostic-Reichel are prepared from the various substances by extraction with a slightly alkaline, buffered saline solution composed of sodium chloride, 0.5 per cent, sodium bicarbonate, 0.275 per cent and phenol 0.4 per cent, in distilled water. Carbon dioxide is then bubbled into the extracts until they become colorless when tested to phenolphthalein. The products are standardized on the basis of their nitrogen content per unit volume (Kjeldahl method) Certain products, namely house dust and horse serum, not lending themselves to such standardization are therefore marketed in dilutions of 1-10 and 1-100 respectively.

Extracts marked 1 are prepared by the following method: The juices are squeezed and separated from pulp by filtration. The *ph* is adjusted to 7.4 with sodium carbonate, diluted with buffered alkaline saline solution, filtered, standardized and diluted to appropriate strength.

Extracts marked 2 are prepared by the following method: The crude material is ground as fine as possible. Alkaline buffered solution is added to the pulp and allowed to extract under toluene for from one to two days at room temperature. After the toluene has been removed in a separator the extract is filtered, standardized and diluted to appropriate strength.

Extracts marked 3 are prepared by the following method: After the removal of all fat and tendons, the muscle fibers are then ground as fine as possible. The ground material is washed with warm (50 C.) toluene until entirely free of fats. The toluene washings are discarded and the ground meats are extracted under toluene with alkaline buffered saline solution at room temperature for from one to two days. The toluene is then removed in a separator and the extract is filtered, standardized and diluted to appropriate strength.

Extracts marked 4 are prepared by the following method: The materials are ground as fine as possible; the powder or flour is washed with ether and toluene until the washings are clear and colorless. The washings are discarded and the residue is dried. The dried residue is extracted with alkaline buffered saline solution under toluene at room temperature for from one to two days. The extract is filtered through a Buchner funnel and the toluene removed in a separator. The extract is filtered, standardized and diluted to appropriate strength.

Extracts marked 5 are prepared by the following method: The materials are washed with ether and toluene, dried and extracted under toluene for from one to two days at room temperature. The extract is cleared of toluene in a separator, filtered, standardized and diluted to appropriate strength.

Lactalbumin, marked 6, is prepared by the following method: The casein is precipitated with renin and the lactalbumin, after neutralization with sodium bicarbonate, is precipitated from the resulting whey with acetone. The lactalbumin is then extracted with alkaline buffered saline solution, filtered, standardized and diluted to appropriate strength.

Egg (Chicken), marked 7, is prepared by the following method: The white is separated from the yolk and diluted with alkaline buffered saline solution, filtered, standardized and diluted to appropriate strength.

House Dust, marked 8, is prepared by the following method: The dust is defatted with ether and toluene, dried, extracted with alkaline buffered saline solution, dialyzed, filtered and diluted to appropriate strength.

Horse Serum, marked 9, is prepared by the following method: Normal Horse Serum is treated with phenol, so that the final concentration of phenol is 0.4 per cent. It is then diluted to proper strength with alkaline buffered saline solution.

Glue (Fish), marked 10, is prepared by the following method: The glue is diluted in alkaline buffered saline solution standardized and diluted to appropriate strength with alkaline buffered saline solution.

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SATURDAY, MARCH 11, 1944

WHAT THE PEOPLE THINK ABOUT MEDICINE AND MEDICAL SERVICE

In July 1943 the National Physicians Committee employed the largest opinion research group in this country to make a comprehensive study of the people's opinion about medical care. The results of that study have just been made available. In making this survey the National Physicians Committee has rendered a distinguished service to American medicine. The report should be of great help to medical leaders by pointing the way in planning for the extension of medical service. The report indicates the necessity for more education of the public regarding the issues involved in proposals for changing the nature of medical service. When people understand the issues, an overwhelming majority are unqualifiedly opposed to any such proposals as the Wagner-Murray-Dingell bill, which would establish federal control of medical practice. Even though the people sense the need for the extension of facilities designed to meet the costs of unusual or prolonged illness, only a small minority, as shown by this report, believe that compulsory sickness insurance would provide a satisfactory solution to the problem.

Many of the questions in this research concerned the personal experiences of the people with medical care as now provided in the United States. The replies, in great majority, indicated that the people are deeply conscious of the value of individualized service in the effectiveness of medical care, that they want complete freedom of choice in time of illness and that they believe choice would be limited and restricted by administration of medical care under the auspices of the federal government.

Out of this report came the conviction that many persons find difficulty in meeting bills for unusual or prolonged illness and desire to participate in plans or methods for insurance against the hazards of emergency illness. Already great numbers of people are familiar with the various prepayment plans for medical service available throughout the country. The investigations extended into many communities in which such plans are operating and covered the experiences of the participants. To summarize the many questions asked on this phase of the report: Persons who participate in prepayment plans approve them; in every instance such persons believe they are better off than their neighbors who have no such opportunity; the doctors in areas where such plans are in operation believe that the people are better off because of the operation of the plan. More than 50 per cent of the doctors in such areas stated that it would be a good thing if all industries would operate prepayment medical and hospital service plans for their employees.

In a special survey, paralleling the study of medical service, opinion was sought concerning the American Medical Association. More than three fourths of the people who were questioned had heard of the American Medical Association, and about half of these defined its purposes with reasonable accuracy. In general, those who had heard of the American Medical Association expressed approval. The inquiry about the American Medical Association was made in the survey to determine the extent to which mention of the public education activities of the medical profession would tend to have a favorable or unfavorable influence on public thinking. The best evidence that the American Medical Association was considered a "favorable symbol" was the fact that most people think of the purposes of the American Medical Association as being "to sponsor new medical technics; to keep the standards of medical practice high; to give endorsement to acceptable medical products." Moreover, less than one tenth of the people interviewed thought of the American Medical Association as a "union" of physicians or as a "trust" or as being otherwise primarily a self-interested body.

The report of this survey, which is available through the National Physicians Committee, should do much to counteract the irresponsible and sometimes malicious criticisms that have been expressed recently within and without the medical profession. The scope and the accuracy of this survey cannot be questioned. The results are a challenge to medical leadership. Only through enlightened medical leadership can medical service and medical science continue to evolve in the United States beyond the high point that they have now attained. The advancement of medical science and of medical education is fundamental to the quality of medical service. Some of the proposals that have been made to federalize medical service, coming from outside the medical profession, would subsidize education and research. From within have come proposals to "unionize" or "commercialize" medical service. The professional status of medical care and medical science must be maintained. The economic factors involved in

securing wider distribution of medical service must be studied and the widest possible application of these services secured. But even the economics of medical service must always be dependent on the science, the art and the practice of medicine.

HYPERPLASIA OF THE PROSTATE

A morphologic study by Moore [1] of so-called benign hypertrophy of the prostate emphasizes that the terms "hypertrophied prostate" and "prostatectomy" do not convey the same idea to the specialist in the urologic field that they do to the general practitioner. The urologist has for some time been aware that the prostate that causes obstruction to urinary flow need not be hypertrophied; the operation he performs for the relief of urinary obstruction is not prostatectomy. The anatomic changes concerned, Moore points out, are nodular hyperplasia and not hypertrophy of the gland. Nodular hyperplasia, therefore, would be a preferable term. The nodules develop from the periurethral glands and also from some point in the prostate itself. Moore's histologic studies showed that the earliest nodules may be demonstrated in acini of the middle and lateral lobes of the prostate about the collicular and subtrigonal periurethral glands, all structures which empty cephalad to the verumontanum. In only 1 instance of 700 prostates examined by him was a nodule demonstrated in a posterior lobe which empties caudal to this point. Moore concludes from these observations that the stroma of the prostate cephalad to the verumontanum reacts to different stimuli or to a greater extent to the same stimuli than does that caudal to the verumontanum. Possibly also the posterior lobe of the prostate is biologically different from the other lobes. Nodules composed only of smooth muscle are not distinctive but represent a variant in which the stromal hyperplasia does not include glands. Nodular hyperplasia is associated with development of masses of lymphoid tissue, an appearance frequently mistaken for an inflammatory infiltration of lymphocytes. Inflammation may occur in the prostate with hyperplasia, but it is not the cause of the disease. The uninvolved part of the prostate shows atrophy and atypical hyperplasia, the histologic evidence of irregular or abnormal stimulation.

As the nodules increase in size, compression of the posterior lobe and of the peripheral portion of the lateral lobes occurs, so that in extreme examples they may not exceed 1 mm. in thickness. This compressed tissue, which in reality is the true prostate gland, has been called the surgical capsule. It is not the same as the anatomic capsule. Microscopically the changes are characteristic and analogous to those of compression atrophy in other glandular organs. This compression atrophy should not be confused with senile atrophy of the posterior lobe that occurs in the absence of so-called benign hypertrophy.

Moore stresses that suprapubic prostatectomy is not in any sense prostatectomy. The operation actually is lobectomy, that is, a removal of the newly formed nodules; the prostate itself is not removed. Moore considers it highly probable that the urinary obstruction in these cases is a physiologic mechanism dependent on the function of the internal sphincter, possibly on spasm. He believes that it is possible that the beneficial results of prostatectomy are the result of destruction of the internal sphincter rather than of the removal of 50 or 100 grams of tissue. The success of the transurethral operation at the bladder neck lends some support to this hypothesis.

1. Moore, Robert A.: Benign Hypertrophy of the Prostate, J. Urol. 50: 680 (Dec.) 1943.

BASAL TEMPERATURE AND DATE OF OVULATION

As early as 1904 van de Velde pointed out the existence of variations in body temperature during phases of the menstrual cycle. A number of clinical investigations since then have confirmed his observation. Rubenstein [1] correlated a study of vaginal smears with a study of basal temperatures and found that during the phase of follicle development the basal rectal temperature tends to drop progressively. The low point in the temperature curve is reached when the follicle matures. Coitus at this time is therefore most likely to result in conception. The beginning progesterone production which occurs before ovulation suffices to counteract in part the temperature depressing action of estrone and therefore to cause an initial temperature rise beginning a few hours before ovulation. The temperature rise continues after ovulation and should exceed 0.5 degree F. in the first twenty-four hours after ovulation and 1 degree F. the first week after ovulation. As soon as the corpus luteum has regressed (a few days premenstrually) new follicles begin to develop. Estrone production begins again, although at a low level. Since there is now no functional corpus luteum, the temperature depressing action of estrone is again apparent and the temperature begins to go down. The drop continues through the preovulative phase of the next cycle. In the event of pregnancy, corpus luteum function persists and the temperature rise of the postovulative phase is maintained. If the temperature curves of a number of previous cycles are available, it is sometimes possible to detect pregnancy before the period is missed, since the temperature remains high.

1. Rubenstein, Boris B.: The Vaginal Smear—Basal Body Temperature Technic and Its Application to the Study of Functional Sterility in Women, Endocrinology 27: 843 (Dec.) 1940.

Greulich and Morris [2] performed laparotomies on 14 women whose temperature records were kept daily for several successive menstrual cycles. Eight of the 14 women were found to have ovulated during the current cycle and 6 showed no indication of recent ovulation. In each of the former the temperature curve showed a characteristic rise of temperature preceding the ovulation. In 5 of the 6 who failed to ovulate, no such temperature rise occurred. A study of basal temperatures in 35 women by Williams [3] showed that during the first half of the cycle an average temperature level of about 98 F. is usually maintained, often followed by an abrupt drop of 0.3 to 0.4 degree and then a shift to a higher temperature level, which continues at about 98.5 F. until one to three days before the onset of the next menstruation. The time of the shift from the low to the high temperature plateau marks the time of ovulation. According to Williams, this general temperature pattern is quite constant in normally ovulating women but varies greatly with pathologic ovulation.

In an article in this issue of THE JOURNAL Tompkins [4] advocates a wider clinical application of the method of detection of the date of ovulation through basal temperature graphs. The method is based on the apparently well established observation that there is a typical temperature curve during the menstrual cycle. The temperature is relatively low during the first part of the month, drops to a minimum about the time at which ovulation occurs and rises definitely thereafter to a relatively high level, which is maintained until the next menses, when the temperature drops abruptly. Such temperature fluctuations are not found before the menarche, after the menopause or in men. If conception occurs, the temperature will remain at the high postovulation level. Tompkins has developed a special form, printed on grid paper, for the recording of daily basal temperatures. Tompkins believes that with the aid of these graphs it will be possible frequently to indicate the date of ovulation. In his experience these graphs have been useful in suggesting to childless couples the time of maximum fertility, in determining the date for endometrial biopsies and in setting the date for artificial insemination in 2 cases, both of which were successful after previous failures. The graphs may also be used to detect the "unsafe period" for those who do not use contraceptive measures. In determining the date of ovulation by the consideration of the basal temperatures, one should remember that such determinations would be correct only in the absence of any infection.

2. Greulich, William Walter, and Morris, Edward S.: An Attempt to Determine the Value of Morning Rectal Temperature as an Indication of Ovulation in Women, Anat. Rec. **79**: 27 (March 25) 1941.

3. Williams, W. W.: The Basal Metabolic Rate, Basal Body Temperatures and the Ovarian Cycle, Am. J. Obst. & Gynec. **46**: 662 (Nov.) 1943.

4. Tompkins, Pendleton: The Use of Basal Temperature Graphs in Determining the Date of Ovulation, this issue, p. 698.

AMERICAN BAR ASSOCIATION CONDEMNS SOCIALIZED MEDICINE

Elsewhere in this issue (page 716) appears a report adopted Feb. 28, 1944 by the House of Delegates of the American Bar Association relative to the Wagner-Murray-Dingell bill, generally called the "socialized medicine bill." The report criticizes the proposed legislation because it is "prepared in a form which has become popular in the past ten years, being replete with involvement, cross references, new terminology, percentages and other confusing matters," so that the chapter on socialized medicine leaves the reader in utter confusion as to its meaning. The distinguished lawyers who prepared this statement point out that "no one can estimate how much tax money is involved or how many people are covered" from the face of the bill. Since, however, the bill would propose to include every individual worker and since every family in the United States has at least one and one-half employed working members, the coverage would include practically every family in the United States.

The statements made by Senator Wagner in introducing this measure are analyzed and at least twelve are pilloried as incorrect and misleading.

A fourth section of the report emphasizes the high quality of medical service prevailing in the United States today and points out that the indigent who are most in need of medical care would not be covered by this measure. "The Wagner-Murray-Dingell bill," says this statement, "would inevitably produce communistic medicine in the United States and would put all the people in a medical straitjacket under the supervision of the federal government for an alleged service which the vast majority either do not require or are able to provide for themselves."

Finally the report emphasizes that there are being developed in this country and under our system of private enterprise many plans for providing adequate medical care without paying the price of socialized medicine. At a previous session the House of Delegates of the American Bar Association stated its opposition "to any legislation, decree or mandate that subjects the practice of medicine to federal control and regulation beyond that presently imposed under the American system of free enterprise."

As a reason for its entrance into consideration of the Wagner-Murray-Dingell bill the House of Delegates of the American Bar Association explains that its organization is limited to an expression of opinion and judgment with respect to those fields which relate to the administration of justice and which directly affect the safeguards and protection of the rights and liberties of the citizens of this country. When, therefore, under the pretext of the general welfare, legislation is proposed in Congress which either inadvertently or with deliberate

subtlety constitutes a direct attack on the rights and liberties of the citizens of this country, it becomes the duty of the American Bar Association actively to voice its objections. The six objections listed specifically include the extent to which the measure depreciates local self government: a condemnation of the authority vested in the Surgeon General of the United States Public Health Service by S. 1161 which would give him the power arbitrarily to make rules and regulations having the force and effect of law; a condemnation of the procedure by which physicians, hospitals and individual citizens would be made to serve the purposes of a federal agency; the failure of the bill to safeguard the rights of patients, citizens, hospitals or doctors, which might be denied by the arbitrary or capricious action of one man; the failure of the bill to provide for any appeal from the action of the Surgeon General; and, finally, the severe condemnation of the vicious system whereby administration officials judge without court review the actions of their subordinates in carrying out orders which might be issued to them.

The final paragraph of this report of the American Bar Association merits quotation and requotation as a fundamental appeal to the citizens of the United States to protect the Constitution. This statement says:

> The Constitution of the United States is designed to protect the citizens of this republic in the exercise of the rights of free men. The provisions of that instrument can be rendered impotent when our citizens, for the sake of an apparent immediate benefit, surrender to their government such direct control over their lives that government, by imposing a constant fear upon them of having those benefits withheld or withdrawn, can compel from them obedience and subservience to its dictates.

Current Comment

PATHOLOGIC ANATOMY AT WAR

Elsewhere in this issue (p. 710) an article on the Army Medical Museum explains the organization of pathologic anatomy in the Medical Department of the U. S. Army. The startling accomplishments of surgery, medicine, physiology, bacteriology and epidemiology as they partake in the war effort tend to obscure the significant part played by pathologic anatomy. In man, and in animals with natural or experimentally induced disorders, the final identification of disease, indispensable in investigation, depends on pathologic anatomy. Through the medium of autopsies and surgical specimens, pathologic anatomy serves the Army in its usual unpretentious manner. The organization now operating in the Army is such that careful examinations can be made in the field; central facilities provide for skilled controls and permanent files. Surgeons are aided in their operative work, internists in their investigation of patients and all medical officers in diagnosis, treatment and prevention, not only of internal diseases, but of injuries on land, on sea and in the air. Recognition of these evident facts should lead to the appropriate placing of pathologic anatomy in all phases of medical work in the services, in the setup of medical administration and in the hospitals and other installations here and abroad. Pathologic anatomy is very much "in" for the duration and beyond.

INTERNSHIPS AND RESIDENCIES FOR LATIN AMERICAN PHYSICIANS

Elsewhere in this issue is an announcement of the decision by the Procurement and Assignment Service that "graduates of Latin American schools currently serving as interns or residents would not be counted in hospital quotas." This ruling should do much to facilitate the hospital training of Latin American physicians, who are coming to this country in increasing numbers for internship and residency training. Until recently the educational and professional ties of many Latin American countries were firmer with European centers of medicine than with the institutions in the United States. The decline of learning and science, including medical education, in Europe during the war will tend to increase the importance of the United States as a center for advanced training for years after the war. Schools and institutions here have escaped not only the physical destruction of war but the even more damaging effects of the intellectually sterile philosophies of the fascist countries. After the war we may expect to be host to many more Latin American physicians, who will turn to the United States rather than to Europe. This tendency deserves the full support of the profession in this country, which will share in a mutually beneficial exchange of ideas and the cementing of lasting inter-American friendships. The Procurement and Assignment Service is to be congratulated for its wisdom in taking an important step in this direction. Medical schools and hospitals will doubtless encourage the postgraduate education of Latin American physicians.

CATIONIC SOAP

The term cationic soap is applied to synthetic detergents which are excellent germicides and are also effective skin cleansers when employed in aqueous solutions at about 1 per cent concentration. In the course of studies on the effectiveness of these agents for rapid degermination of the hands, Miller and his colleagues [1] discovered that they deposit a nonperceptible film on the skin. This film retains bacteria underneath it and is resistant to mechanical trauma; whereas the outer surface exerts a strong germicidal action, the inner surface of the film has a low bactericidal power. These observations introduce a further complication into the evaluation of products of this type.

1. Miller, B. F.; Abrams, R.; Huber, Dorothy A., and Klein, M.: Formation of Invisible, Nonperceptible Films on Hands by Cationic Soaps, Proc. Soc. Exper. Biol. & Med. **54**: 174, 1943.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeons General of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

ARMY

ARMY MEDICAL MUSEUM

Army Institute of Pathology

Howard T. Karsner, M.D.
CLEVELAND

An understanding of the part which pathology plays in the medical service of the Army depends in large part on a realization of what goes on in the Army Medical Museum. This remarkable institution was established in 1862 by order of Surg. Gen. William A. Hammond, when he directed medical officers to send to his office morbid anatomic specimens illustrating wounds and the effects of projectiles. Seven months later, 1,349 specimens had been collected. Situated first in the Surgeon General's Office, a separate building was required within a year. Ford's Theater was closed after the assassination of President Lincoln but was subsequently altered by order of Congress for the housing of the museum. Money for the present building was appropriated in 1885 and construction completed in 1887, or fifty-seven years ago. The Army Medical Library, which was established by Surgeon General Lovell in 1835, has shared these quarters from the beginning.

Visitors from Europe have repeatedly praised the museum, and in 1870 Berenger-Féraud said that the United States had done as much in five years as had all Europe in a century and that our museum contained more specimens than all the pathologic anatomic museums of Europe combined. It remains the only medical museum maintained by the United States government.

The present communication is not concerned principally with the function as a museum, even though by 1937 there were 150,000 specimens and 45,000 photographs. Nor is there any need to discuss the education of the public in matters of preventive medicine and hygiene through the medium of exhibits, which occupy 15,200 square feet of floor space. In passing, however, it may be mentioned that there are now well over 100,000 visitors a year.

In his book "Victories of Army Medicine," Brigadier General Hume [1] says that Surgeon General Hammond had in mind the study of specimens collected in order to "lead to reduction in mortality." This has been done by investigation and by teaching. Hume speaks of three great institutions, the Army Medical Library, the Army Medical Museum and the Army Medical School. These have been closely associated, and the museum staff has been responsible for teaching pathology in the school. Teaching of various other groups will be mentioned later.

The purposes of the museum have been expanded so that it is now authorized to use as a subtitle Army Institute of Pathology. As a matter of fact, the new subtitle gives a clearer indication of its present activities than the original designation. Army Regulation 40-410, issued Aug. 3, 1942, states that "the primary professional function of the Army Medical Museum is to furnish a central service for tissue pathology." This central laboratory has three major aims, which are (*a*) diagnosis and review of pathologic material, (*b*) instruction and (*c*) research.

The arrangements for diagnosis and review of pathologic material have been found to be highly effective. The professional staff of the museum now includes a group of active pathologists well trained in general pathology and certain of its special fields as well as pathologists especially competent in dental and in veterinary medicine. Because of obvious limitations, fully trained pathologists cannot be provided for every army hospital. To meet this situation, seventeen histopathologic centers have been established in the United States and several central laboratory units have been sent overseas, all staffed by trained personnel. Through these channels all autopsies are reported to the institute laboratories, including protocols, clinical abstracts, photographs, x-ray films, microscopic sections, paraffin or tissue blocks and, when advisable, whole organs. All places where autopsies are to be performed are supplied with a directive of technic prepared at the request of the Surgeon General by a Conference Group on Pathology of the National Research Council. Surgical specimens are similarly routed, especially all tumors, but the histopathologic centers are expected to "screen out" material not of sufficient importance to be sent in for review. Reports are sent to the referring laboratories and also placed in the permanent files of the museum. Thus any medical man is assured that study of cases at autopsy is not restricted by field conditions, and any surgeon knows that his material will be examined by groups of well qualified pathologists. If the surgeon is in a hurry, his specimen can be sent by air mail and he receives a report by radiograph.

Army Regulation 40-410 directs that the material be made available "for teaching purposes at Medical Department schools, other schools devoted to military education, and for recognized medical, dental and veterinary schools." The teaching function is exercised in various ways. Teaching at the Army Medical School has been mentioned. For a time, officers from army laboratories and those about to assume such duties were assigned to the museum for temporary duty in order to become familiar with the museum and its work. Certain officers have been assigned to develop various special fields, such as neuropathology and dermal pathology. Of great importance is the preparation and distribution of "study sets." These are widely circulated among army hospitals and give the officers exceptional opportunity to study various lesions. The sets, each numbering from 25 to 50 microscopic sections, cover such subjects as epidemic hepatitis, periarteritis nodosa, nevi and dermal cancer, interstitial pneumonitis, intracranial tumors, diseases of the thyroid, diseases of the lymph nodes and lesions of the distal parts of the nephrons. The list is constantly being enlarged.

The clinicopathologic conference is also used as a teaching method. The museum furnishes material for these exercises, including clinical records, autopsy protocols, microscopic sections, lantern slides, epicrises and bibliographies. These are readily available to army medical installations.

Material on tropical diseases is provided for the Army and to civilian schools. For this purpose tissue blocks, microscopic sections and lantern slides, and material for clinicopathologic conferences can be procured on application to the curator. This activity, supported by the John and Mary R. Markle Fund, is of far reaching importance in present day instruction. With the aid of the Josiah Macy Jr. Foundation, lantern slides have been prepared and distributed for the use of civilian pathologists who participate in the remarkable program of postgraduate instruction in the hospitals of the Army Air Forces.

In line with its educational program, the museum maintains several registries of pathology. Army Regulation 40-410 authorizes the museum "to act as custodian for the National Research Council of the American Registry of Pathology." By arrangement with various special societies, the museum receives

1. Hume, E. E.: Victories of Army Medicine: Scientific Accomplishments of the Medical Department of the United States Army, Philadelphia, J. B. Lippincott Company, 1943.

specimens for study both individually and collectively. Accompanying the specimens are notes on clinical features, roentgenograms and so on. The registries vary greatly in number of accessions, but it is noteworthy that there are on file approximately 2,000 cases of ocular melanoma and 4,000 tumors of the bladder and that about 125 human eyes are received each month. These registries now include tumors of the lymphatic apparatus, ophthalmic pathology, genitourinary pathology, dermal pathology, otolaryngic pathology, orthopedic pathology, gyneco-pathology, oral and dental pathology and tumors of the brain, the breast, the endocrines and bone. From the specimens collected, study sets comprising from 25 to 100 microscopic preparations are lent to society members and others. In addition there are exceedingly valuable atlases, illustrated by photomicrographs which are accompanied by clinical and descriptive data. These can be purchased at cost of manufacture. Started when Col. G. R. Callender was curator, the registries of pathology have increased in number and comprehensiveness and have assumed great importance under the direction of the present curator, Col. J. E. Ash.

Army Regulation 40-410 orders the conduct of "investigations and research on the accessions" and the arrangement of material so "that it will be available for reference and study by other properly qualified investigators." The staff of the museum has followed this order with keen interest. The investigations are not merely academic research projects but in large part have immediate application. The studies of epidemic hepatitis, which seemed to follow vaccination against yellow fever, showed conclusively that our troops had not contracted yellow fever as a result of vaccination. The studies of blast injuries, here and elsewhere, have determined methods of protection. Significant also are the examinations of material from cases of burns, crush syndrome, transfusion reactions, blackwater fever and the like. Both from the point of view of diagnosis and also research, attention is being given to the occurrence of tumors, malignant and benign, especially of the skin and the central nervous system, to disease of the coronary arteries and to other disorders usually thought to belong to a different age group from that active in military operations. Perhaps of less direct application, but nonetheless of vast importance, are investigations now being conducted of such conditions as primary atypical pneumonia, viral infections of the central nervous system, tropical diseases, lesions of the lymph nodes, meningitis, periarteritis nodosa, nontuberculous destructive disease of the adrenals, tumors of the jaw and other bones, tumors within the eye and epibulbar tumors, and effects of high altitude on the ear. The list is too long to permit mention of all the conditions under study.

The photographic section has operated since 1867. It has gradually been extended and improved so that now the gross photographs and photomicrographs, both black and white and in color, are the best that can be produced. In addition, a center for medical photography, under the direction of a skilled and experienced professional, guides the work in the whole medical service of the Army, cooperates with the Signal Corps and has sent several trained units overseas. In addition to drawings and paintings, some of which date back to the Civil War, plastic art is represented by many models and moulages. With this background, a department has been established under the direction of a distinguished sculptor, in which are made latex models of wounds and other injuries. The realistic pliable plaques can be attached to extremities and on the body, so that training in the Medical Field Service School and elsewhere becomes intensely practical.

Under the authority of the Surgeon General, the museum has instituted its system of resident consultants. Civilian pathologists, especially those with established reputations in certain lines of teaching and research, take up residence in Washington for two or three weeks, during which time they are in constant daily attendance at the museum. The officers bring to them problems of pathologic diagnosis, refer certain aspects of investigations, look to them for suggestions as to further studies and generally pump them dry. In return, the consultant sees the work of an enthusiastic, energetic group of medical officers devoted to the service of the nation and of science. He sees a pathologic material which in volume, variety and current interest cannot be equaled in any other laboratory in this country and probably not in any other institution the world over.

The place is as active as the proverbial beehive, but without the physical excellence of the hive. The building is now so old as to be unsuited to its manifold purposes. Equipment is good but not ideal. Facilities of one kind or another are deficient in many respects, such as elevators, toilets and lavatories. Hazards due to fire and water have not been accurately assessed, but they exist. In spite of these handicaps, work of high order is carried on by a loyal group of medical and other officers, including regulars and those commissioned from civil life, and lay associates. It is to be urged that construction of a new building will not be delayed any longer than is absolutely necessary.

This Army Institute of Pathology goes far beyond the scope of a museum. I speak as one having authority because I am one of those who have had the esteemed privilege of being a resident consultant.

2085 Adelbert Road.

TRAINING OF NEWLY COMMISSIONED MEDICAL CORPS OFFICERS WHO ARE RECENTLY GRADUATED INTERNS

Many newly commissioned medical corps officers who have recently completed a nine months internship and the basic course for medical department officers are being attached to named general hospitals for the completion of their professional training, according to Army Service Forces Circular No. 47, dated Feb. 12, 1944. While attached to these general hospitals they will be given "on the job" training as understudies in active medical and surgical wards and in clinics. Duty assignment on surgical and medical services will be rotated at least once every three weeks. It is contemplated that immediately following this training in a named general hospital these officers will be assigned as medical and surgical ward officers, as laboratory officers and as medical officers with tactical units.

Subjects which should be particularly emphasized on ward rounds and in clinics include attention to and care of the seriously ill; use of penicillin in both surgical and medical cases; use of sulfonamides in both surgical and medical cases; treatment of venereal diseases; general principles of wound treatment, including débridement, control of pain, prevention and treatment of shock; treatment of fractures and other orthopedic conditions, including splints and splinting, use of plaster of paris bandages, Tobruk splints and the care and handling of back injuries; general principles in the handling of head, face and jaw wounds and wounds of the chest and genitourinary system; treatment of burns; problems and principles of transfusions under field conditions, including whole blood transfusions, direct and indirect transfusion technic and the use of blood substitutes to include plasma, albumin and electrolytes; administration of tetanus toxoid and gas gangrene serum; administration of vaccines; diagnosis and treatment of malaria; diagnosis and treatment of bacillary and amebic dysentery; diagnosis and treatment of dengue and typhus; prevention and treatment of heat stroke, heat exhaustion and heat cramps; prevention and treatment of freezing, frostbite, snow blindness and immersion foot, and the handling of neuropsychiatric cases.

The commanding officer of each general hospital will designate a training officer who will be responsible for the conduct, rotation and coordination of this training, ward rounds and clinics so that these officers can derive the maximum benefits from this limited period of "on the job" training.

AWARD OF SOLDIER'S MEDAL

A Medical Corps officer and four Medical Department enlisted men, all members of the Medical Detachment with a Coast Artillery battalion, have been awarded the Soldier's Medal for the rescue of injured persons from a burning ammunition barge in Sicily, the War Department announced recently. When responding to a call for emergency medical assistance, they rushed to the burning barge, where, in the midst of exploding ammunition and faced with the imminent danger of further major explosions, they succeeded in collecting the injured and transferring them to the shore for first aid and evacuation.

Through their efficient performance of duty and utter disregard of personal risk, many lives were saved. Those decorated were Capt. Samuel P. Durr, Medical Corps, Rock Island, Ill.; Corp. Rodney M. Preston, Jacksonville, Ill.; Private First Class John A. Dobrinski, New York, and Private Hubert Messenger, Kingman, Kan.

33D FIELD HOSPITAL

LIEUTENANT COLONEL SAMUEL A. HANSER, M.C., A.U.S.
Commanding 33d Field Hospital, APO No. 306

Because of the many inquiries with regard to the article about our hospital (THE JOURNAL, Nov. 20, 1943, p. 774) I am writing this explanation in regard to the use of field hospital platoons in the advanced combat zones. Since the Italian campaign began, this field hospital has had the opportunity of having its platoons behind the individual divisions as close to the front lines as possible.

The field hospital basically contains a headquarters and three platoons, and a total of twenty-two officers, eighteen nurses and one hundred and eighty-seven enlisted men. A platoon consists of four medical officers, one dental officer, one medical administrative officer and fifty-six enlisted men. When working in an advanced combat zone it is reinforced by auxiliary surgical teams, usually four general surgical teams and one shock team. A surgical team consists of a surgeon, assistant surgeon, anesthetist, one nurse and two or three enlisted men.

The mission of a field hospital is to take care of nontransportable casualties, that is the patients whose conditions are critical and whose lives are endangered or lost by transporting them back to an evacuation hospital. The surgery is done by the best qualified surgeons in the theater.

During the Italian campaign we have taken care of 1,300 casualties and we feel that we have saved many lives by doing major surgical procedures in the advanced combat zone. The field hospital platoons have the finest of equipment, closed anesthesia machines, oxygen therapy machines, a blood bank and other vital necessities needed for the best possible surgery.

PRISONER OF WAR

Word has recently been received from Capt. Harry S. Hickman, formerly of Grants Pass, Ore., that he is being held a prisoner of war in the Philippines. Dr. Hickman graduated from the College of Medical Evangelists, Loma Linda, Calif., in 1940 and entered the service in October of that year.

NAVY

REGIMENTAL DOCTORS

Doctors assigned to a Marine regiment somewhere in the South Pacific pose in front of their sick bay. They are, left to right, Drs. Thomas E. Newell, Dayton, Ohio; Earl M. Haugrud, Fargo, N. D.; Max A. Finton, Jackson, Mich.; Maurice R. Walsh, Covington, Ky.; John V. Reilly, St. Louis, and Don P. Nebeker, Los Angeles. All are M.D.'s with the exception of Dr. Reilly, who is a D.D.S.

Medical officers assigned to a marine regiment in the South Pacific. Official U. S. Marine Corps Photo.

CAPT. JOEL J. WHITE AWARDED LEGION OF MERIT

Capt. Joel J. White, United States Navy, formerly of Nashville, Tenn., was awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as commanding officer of a naval hospital at an advanced base in the South Pacific Area from August 1942 to January 1943. Displaying outstanding professional skill and remarkable physical endurance, Captain White organized and operated a hospital in the New Hebrides Islands with a section assigned to Guadalcanal during the early period of operations at this strategic base. With utter disregard for his own personal safety he made repeated trips into the forward combat areas in order to develop facilities for the efficient treatment of battle casualties under extremely difficult and trying conditions. His brilliant leadership and untiring devotion to duty contributed in large measure to the successful care of many hundreds of patients." Dr. White graduated from Vanderbilt University School of Medicine, Nashville, in 1916 and has been in service since Aug. 20, 1917.

LIEUT. FRANK K. DEAN AWARDED BRONZE STAR

Lieut. Frank K. Dean, formerly of Madison, Wis., was awarded a bronze star for participating in the battle of Tarawa in November 1943, two months after reporting for duty as a member of the Navy Medical Corps. He previously had received an Asiatic Pacific campaign ribbon. Dr. Dean wrote to his wife, in Madison, that the ship on which he saw duty had carried no medical officer and he found no preparations or supplies when he went aboard. Just as the pioneer doctors, he was forced to improvise. From the ship's cook he commandeered tablespoons for retractors, forks for slings, and a pressure cooker for a sterilizer. Splints were whittled ashore, and a local station gave him sutures and plasma. Dr. Dean graduated from Northwestern University School of Medicine, Chicago, in 1935.

FIRST GRADUATING CLASS AT NEW HOSPITAL CORPS SCHOOL

Two hundred and twenty-four enlisted members of the Women's Reserve, U. S. Naval Reserve, graduated February 7 in the first graduating class of the newly commissioned Hospital Corps School at the U. S. Naval Hospital, Bethesda, Md. Twenty-two finished the intensive four week course with the rating of pharmacist's mate, third class; 146 as hospital apprentice, first class, and fifty-six as hospital apprentice, second class. Rear Admiral C. W. O. Bunker, medical officer in command of the National Naval Medical Center, and Capt. W. J. C. Agnew, Medical Corps, U. S. Navy, of the Bureau of Medicine and Surgery, addressed the graduating class, and certificates were presented by Capt. John Harper, commanding officer of the Hospital Corps School.

FIRST NAVY NURSES IN EUROPE

One hundred navy nurses, the first to set foot on European soil since the beginning of the war, have arrived in England for assignment to duty in a British hospital which is being taken over by the Navy. Lieut. Comdr. Mary Martha Heck, A. N. C., is in command and will direct all navy nursing activities in the European theater.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

LATIN AMERICAN MEDICAL GRADUATES SERVING AS INTERNS AND RESIDENTS IN U. S. HOSPITALS NOT COUNTED IN QUOTA

At a recent meeting of the Directing Board, Procurement and Assignment Service, it was decided that graduates of Latin American medical schools currently serving as interns or residents would not be counted in hospital quotas.

It was felt that most Latin American doctors who accepted internships or residencies were in fact postgraduate fellows attached to U. S. hospitals. In some instances language difficulties precluded their rendering as much medical care to hospital patients as native born and U. S. trained house officers. If Latin American physicians were to be counted in hospital quotas, there would be some hesitancy in accepting them in lieu of native born United States medical graduates.

Since it is highly desirable to have Latin American physicians seek postgraduate medical training in the United States, dropping them from hospital quotas would encourage hospital superintendents to accept them as interns and residents and thus facilitate their securing additional training in this country.

CIVILIAN DEFENSE

NEW OCD CHIEF MEDICAL OFFICER STATES FUTURE POLICY

The U. S. Office of Civilian Defense announces that Dr. W. Palmer Dearing, senior surgeon, U. S. Public Health Service, has been appointed chief medical officer, effective March 1, to succeed Dr. George Baehr, who has served as chief medical officer since June 1, 1941. Dr. Courtney M. Smith, senior surgeon (R), U. S. Public Health Service, formerly regional medical officer of the Ninth Civilian Defense Region (West Coast), will become assistant chief medical officer. Dr. Wallace M. Chapman, surgeon (R), U. S. Public Health Service, will succeed Dr. H. van Zile Hyde as field casualty officer, and Dr. Charles C. Chapple, surgeon (R), U. S. Public Health Service, will succeed Dr. Karl J. Thomson as intelligence officer. Dr. Dearing released the following statement:

"The Emergency Medical Service, the casualty receiving and emergency base hospitals, the plans for emergency medical service to industrial plants and the plans for mutual aid on a statewide or regional basis for distribution in an emergency of personnel, equipment and supplies, including blood plasma, must be maintained.

"The affiliated units consisting of fifteen physicians, surgeons and specialists commissioned in the Public Health Service Reserve, which are available for call to render aid to civilians or to military personnel in a war emergency, will continue to maintain their organization for service when needed. They will be activated by the Surgeon General of the Public Health Service on recommendation of the state chief of Emergency Medical Service through the chief medical officer, Office of Civilian Defense. The circumstances under which they will be called to serve are set forth in OCD Circular, Medical Series No. 31. Likewise, affiliated nurses' units which have been recruited to serve in such emergencies are composed of twenty-two nurses each who have special civil service appointments. The file of names will be kept current in the Emergency Medical Section of the Public Health Service and in the regions where organized.

"The blood plasma banks which have been established in 180 hospitals with the assistance of grants-in-aid from the Public Health Service on recommendation of the Office of Civilian Defense will continue to maintain their reserves of plasma, which can be dispatched as needed by the local or state chiefs of Emergency Medical Service. In addition, the 29,500 units of frozen and 50,000 units of dried plasma procured by the Public Health Service and distributed to the physicians and hospitals of the Emergency Medical Service will continue to be available. Dr. John B. Alsever, surgeon (R), U. S. Public Health Service, will continue to exercise technical supervision of the plasma program and to consult with hospitals on their plasma problems.

"The Rescue Service, which was recently inaugurated following two nationally sponsored pilot schools at Pittsburgh and at Berkeley, Calif., is being developed under the direction of Mr. Philip Miller, engineer (R), U. S. Public Health Service, chief rescue officer. Rescue personnel trained in the pilot schools are conducting training schools in states and communities. This training has already paid dividends in lives saved at disasters such as the Easton, Pa., explosion and fire, the wreck of the Congressional Limited, the disaster from the explosion at Kearney, N. J., and other lesser catastrophes.

"The gas protection program will be continued under Dr. Alberto F. Thompson Jr., sanitarian (R), U. S. Public Health Service, chief gas officer. Local gas reconnaissance specialists will be encouraged to maintain their organizations at peak efficiency by locally sponsored and conducted refresher courses for which the newest and most satisfactory methods of detection and recognition of gases will be available. Consultative assistance will be provided to states and communities by the Office of Civilian Defense when requested. More emphasis will be placed on the routine hazards surrounding manufacture, transportation and storage of toxic chemicals, hazards which can be dealt with only by chemically trained persons.

"The sanitary engineering program, including the mutual aid water program, will be continued under state and local auspices with the guidance of the U. S. Public Health Service. The Public Health Service was directed by the President to assume responsibility for security of public water supplies, and the engineering staff of the Medical Division has been transferred to the Public Health Service to operate the two programs concurrently and to serve in a consultant capacity to the O. C. D.

"The recent reduction of the staff of the National Office of Civilian Defense makes it imperative that states and communities assume more responsibility for these activities. The Emergency Medical Service organization in the field and in hospitals has repeatedly demonstrated its value in the disasters which wartime hazards have brought on us in increasing numbers. For the first time the health medical facilities of our communities have been organized for effective mobilization in the event of an emergency, and these gains should not be allowed to lapse. It is desirable that the Emergency Medical and Rescue Services be allied with permanent agencies of state and local government.

"In many localities the Emergency Medical Service has already been established under the health department. This has many advantages because the health department is a professional organization with the administrative machinery and personnel already at hand to maintain leadership, keep records and serve as the coordinating center in an emergency. Those cities having a department of hospitals may find it advantageous to establish and maintain the Emergency Medical Services under their jurisdiction. It would be desirable for this pattern to be extended to those communities which have established the Emergency Medical Service on a temporary basis without any relation to permanent agencies. Similarly, the Rescue Service might well be established in the public works department. Rescue work requires heavy equipment, tools, trucks and strong willing hands. The permanence of the public works department will be of great assistance in maintaining the organization.

"The emergencies which have been created by the war have borne fruit in the consolidation of community thinking and action in the protection of their communities. With the maintenance of a well trained and equipped Emergency Medical Service, every community will be prepared to give adequate care to injured and to save lives which otherwise would be lost. It appears certain that this cooperative and constructive spirit will be preserved in the organized Emergency Medical Services of the Citizens Defense Corps throughout the country."

ORGANIZATION SECTION

OFFICIAL NOTES

COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

A meeting of the Council on Medical Service and Public Relations was held in Chicago on February 14 and 15. The following members were in attendance: Dr. Louis H. Bauer, chairman, Dr. James E. Paullin, Dr. James R. McVay, Dr. W. S. Leathers, Dr. E. J. McCormick, Dr. Alfred W. Adson, Dr. John H. Fitzgibbon and Dr. G. Lombard Kelly, secretary. The subjects discussed included:

FELLOWSHIPS IN A. M. A. FOR MEDICAL STUDENTS

The Council will recommend to the House of Delegates that the Board of Trustees work out a plan whereby medical students in approved schools can become student members of the American Medical Association and that the Board recommend the necessary changes in the Constitution and By-Laws to accomplish this. The idea of this recommendation is to inculcate medical students with the ideals of the medical profession and the medical societies.

COURSES IN MEDICAL ECONOMICS, SOCIOLOGY AND ETHICS

It was also decided to request the Council on Medical Education and Hospitals to consider taking the necessary steps as soon as possible to have each medical school give a course on medical sociology, medical economics and medical ethics.

PLATFORM OF THE A. M. A.

The Council decided to study the platform of the American Medical Association adopted in 1937 with a view to revising it and bringing it up to date and then to refer the revised platform to the House of Delegates for consideration.

ANALYSIS OF MEDICAL PLANS

The Council considered various medical service plans, including the up to date analysis of society-sponsored plans by the Bureau of Economics. It discussed various industrial plans and has the whole subject of voluntary insurance under study. It also considered the question of diagnostic laboratories and medical service bureaus and likewise has them under further study.

VETERANS BUREAU

A considerable discussion was devoted to the status of medical service of the Veterans Bureau, and a conference will be asked with officials of the Veterans Bureau to see in what way the Council can cooperate with them in improving the status of the medical service.

THE BUDGET

A budget was adopted and referred to the Board of Trustees.

COOPERATION WITH STATE SOCIETIES

All state societies are requested to send a copy of their state journals to the office of the Council in Chicago so that the Council can keep informed of actions taken in various states.

INDIANA PLAN TO COMBAT WAGNER-MURRAY-DINGELL BILL

The Council studied the speaker's kit compiled by the Indiana State Medical Association in its fight against the Wagner-Murray-Dingell Bill and considered it an excellent collection of material and invites attention of the other states to what Indiana has accomplished in this regard.

MEETING IN WASHINGTON

The Council decided to hold its next meeting in Washington, D. C., and to devote one day of its meeting to a conference with various agencies concerned in medical care.

DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 4:30 p. m. Eastern war time (3:30 Central war time, 2:30 Mountain war time and 1:30 Pacific war time).

The titles and guest speakers for the next three programs are as follows:

March 11. "Battles Won in Laboratories."
Speaker, A. C. Ivy, Ph.D., M.D., Northwestern University.

March 18. "You Must Help Win This War."
Speaker, H. A. Vonachen, M.D., medical director, Caterpillar Tractor Company, Peoria, Ill.

March 25. "Our Blood for Our Boys."
Speaker, G. Canby Robinson, M.D., national director, Blood Donor Service, American Red Cross, Washington, D. C.

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—A subcommittee of the Senate Committee on Commerce has voted to submit an unfavorable report to the full committee with regard to S. 1096, creating a Bureau of Vital Statistics in the United States Public Health Service. A subcommittee of the House Committee on Interstate and Foreign Commerce has been conducting public hearing on H. R. 3379, to codify the laws which relate to the Public Health Service.

Bills Introduced.—H. R. 4251, introduced, by request, by Representative Bland, Virginia, proposes to give honorably discharged, disabled or retired marine employees of the Panama Canal a preference under civil service and to extend to them the facilities of the Public Health Service. H. R. 4255, introduced, by request, by Representative Barry, New York, proposes to amend the law relating to the Federal Trade Commission so as to authorize that commission to require in any order it may issue the publicizing by radio or printed advertising the contents of the order by the person, partnership or corporation complained of, the publicizing being at the expense of the person, partnership or corporation. H. R. 4260, introduced, by request, by Representative Pace, Georgia, proposes to amend the Agricultural Adjustment Act to provide for the maintenance and operation of school lunch programs.

STATE MEDICAL LEGISLATION

Kentucky

Bill Introduced.—H. 366 proposes to authorize the state board of health to give medical scholarships of $600 annually to bona fide residents of Kentucky who agree in writing to pursue medical courses in accredited medical colleges in Kentucky and after graduation and completion of internships of not exceeding two years to engage continuously in the practic of medicine in rural communities in Kentucky, to be selected by the state board of health, for a period of years equal to the number of years that each is a scholarship beneficiary.

Mississippi

Bills Introduced.—H. 401 and H. 455 propose to provide a system of workmen's compensation for industrial accidents. H. 531 proposes to make it unlawful for any person to employ another, or for any person to accept the employment, as a domestic servant unless within thirty days after the date on which the employment commences the domestic servant submits to a medical examination to be performed by a licensed physician. Such employment can then continue only if, on the basis of that examination, the examining physician issues a certificate that the domestic servant is apparently free from syphilis, gonorrhea, tuberculosis or typhoid fever. S. 267 proposes to appropriate $54,000 to provide funds with which the state board of health and the state department of education may cooperate with the international health division of the Rockefeller Foundation and the general education board, respectively, in carrying out a program of coordinated school, health and nutrition services. S. 261 proposes to require annually as a prerequisite for the employment of all public school teachers and other state employees working directly with children an "x-ray analysis by a competent physician or by the state health department." The bill proposes that, if such examination "shows a positive result," the services of that employee shall be terminated for work with children so long as in the opinion of a competent physician or the state health department the tuberculosis is in an active and contagious stage. H. 503 and H. 527 propose to establish a four year medical school and hospital, to be known as the University of Mississippi Medical School and Hospital. H. 406 proposes to authorize the counties, cities or towns or supervisors' districts, separately or jointly, to establish and operate hospitals and to cooperate with the Works Progress Administration, or other agency of the United States government, or with one or more counties or one or more cities, or combination thereof, and the state, in the establishment and operation of those hospitals.

New York

Bills Introduced.—S. 898 and A. 1167, to amend the uniform narcotic drug act, propose, among other things, to prohibit supplying of narcotics for nonmedical needs or for the treatment of drug addiction when the patient is not confined to an institution, hospital or home, or for the satisfaction of a narcotic habit not complicated by an emergency or the presence of an incurable disease. S. 934, to amend the laws relating to the practice of medicine, proposes that licentiates be required to register on or before March 1 in each even year, rather than of each year as now required. A. 1355 proposes that the state pay to any person injured by a dog the medical expenses, not to exceed $100, incurred by reason of the injury. The owner of the dog or dogs involved is to be liable to the county in reimbursement for the amounts so paid. A. 1452 proposes to establish in the state health department an insurance fund to pay for necessary medical care for all persons insured by the fund. The scheme applies to all persons employed in the state at wages not in excess of $2,500 and is financed by compulsory contributions from the employer and employee and from the state.

New Jersey

Bills Introduced.—A. 134, to amend the medical practice act, proposes to permit the board of medical examiners during the present war and for a period of three months after its cessation to admit an applicant to examination for a license to practice who has completed not less than nine months of an internship acceptable to the board in a hospital approved by the board. The bill also proposes to authorize the revocation of a license of a licentiate who has plead nolo contendere, non vult contendere or non vult to an indictment, information, complaint or accusation alleging the commission of the crime of criminal abortion or of crime involving moral turpitude. A. 135, to amend the medical practice act, proposes to exempt from the provisions thereof a chiropodist "while operating in each particular case under the specific direction of a regularly licensed physician or surgeon."

Rhode Island

Bill Introduced.—H. 748 proposes to appropriate $25,000 to be expended under the direction of the state director of health for the hospitalization of wives and children of men in the armed services below the grade of commissioned officers who are unable to pay for necessary hospital care.

South Carolina

Bill Introduced.—H. 1052 proposes to permit as a deduction in computing net income subject to taxation "all monies paid by individuals to hospitals for hospitalization, and also all monies paid for medicines, services of nurses and services of physicians during hospitalization."

Virginia

Bill Introduced.—Substitute for S. 103 proposes to make incurable insanity a ground for divorce.

MISCELLANEOUS

OFFICE OF VOCATIONAL REHABILITATION OF FEDERAL SECURITY AGENCY

The first meeting of the Professional Advisory Committee of the Office of Vocational Rehabilitation of the Federal Security Agency was held in Washington on Friday March 3.

Present were the following members of the committee representing the professional specialties most actively concerned in rehabilitation:

Rev. John W. Barrett, Chicago, director of Catholic hospitals, Archdiocese of Chicago
Miss Harriet Bartlett, Boston, president, American Association of Medical Social Workers
Dr. E. M. Bluestone, New York, director, Montefiore Hospital
Dr. Karl M. Bowman, San Francisco, president-elect, American Psychiatric Association
Dr. Roderick Brown, Pittsburgh, tuberculosis specialist
Dr. Guy A. Caldwell, New Orleans, secretary, American Board of Orthopedic Surgery
D. John S. Coulter, Chicago, member, Council on Physical Therapy, American Medical Association
Dr. Purman Dorman, Seattle, ophthalmologist
Dr. Robert Elman, St. Louis, associate professor of clinical surgery, Washington University School of Medicine
Miss Marjorie Fish, New York, in charge, Professional Courses in Occupational Therapy, Columbia University
Lieut. Col. Raymond Hussey, M. C., A. U. S., Baltimore, director, Army Industrial Hygiene Laboratory
Dr. Victor Johnson, Chicago, secretary, Council on Medical Education and Hospitals, American Medical Association
Dr. E. S. Mariette, Minneapolis, medical director and superintendent, Glen Lake Sanatorium
Dr. Horace Newhart, Minneapolis, professor emeritus of otology, rhinology and laryngology, University of Minnesota Medical School
Dr. Winthrop M. Phelps, Baltimore, orthopedic surgeon
Miss Marion Randall, Washington, D. C., chief nurse, Medical Division, Office of Civilian Defense
Dr. W. D. Stroud, Philadelphia, member, Council on Industrial Health, American Medical Association
Dr. V. P. W. Sydenstricker, Augusta, Ga., professor of medicine, University of Georgia School of Medicine
Dr. H. A. Vonachen, Peoria, Ill., medical director, Caterpillar Tractor Company
Mr. Frank J. Walter, Denver, president, American Hospital Association

Also attending the meeting by invitation were these members of the Rehabilitation Advisory Council:

Dr. Kendall Emerson, New York, managing director, National Tuberculosis Association
Dr. Carl M. Peterson, Chicago, secretary, Council on Industrial Health, American Medical Association
Dr. Donald C. Smelzer, Philadelphia, president-elect, American Hospital Association
Dr. George Stevenson, New York, medical director, National Committee for Mental Hygiene
Miss Catherine Worthingham, Palo Alto, Calif., president, American Physiotherapy Association

The committee, made up of twenty specialists in medical and allied fields, was appointed by Administrator McNutt to provide professional guidance in mapping the new state-federal program for medical and surgical care under the Barden-LaFollette act.

Physical restoration for the handicapped, so that they may as nearly as possible approximate normal capacity, was called the

basic need in vocational rehabilitation by Federal Security Administrator Paul V. McNutt. In opening the meeting he stressed the Federal Security Agency's desire to aid the states in providing physical restoration services which will conform to the high professional standards recognized by the national and state medical associations and by the hospital associations.

"To be able to count on themselves as workers," Mr. McNutt continued, "many of the disabled need more than vocational training, important as that is. They need medical care to restore as much physical capacity as possible. Doctors have long pointed out that tackling the complex problem of rehabilitation at any other point is putting the cart before the horse. Some of the states too have pioneered in providing for physical restoration, along with vocational training, for the handicapped. This service has now been recognized as an integral part of our national vocational rehabilitation program.

"We want to give the disabled—the men and women crippled in industry or by accident or illness—a chance to fulfil their rights and duties as citizens and as self-supporting wage earners. We want to do this because it is in line with the American way of looking out for ourselves. We want to do it now, because war industry needs every hand that can help."

An estimated million and a half persons may be eligible for rehabilitation under the program authorized by the enactment of the Barden-LaFollette bill last summer, according to a statement by Michael J. Shortley, director, Office of Vocational Rehabilitation.

Reporting the total active case load as 91,000 for the current year, he said that "the states indicate they will extend rehabilitation services to 110,000 disabled persons during the fiscal year 1945." The program is in operation in all forty-eight states, the District of Columbia, Hawaii and Puerto Rico. "Physical restoration rounds out vocational rehabilitation services. It gives us the chance," he said, "to do more things for more people."

The committee reviewed the basic plans, policies and regulations governing the program in a discussion led by Mr. Shortley. Plans for organization were brought before the committee by Dr. Dean A. Clark of the U. S. Public Health Service, who is chief medical officer for the Office of Vocational Rehabilitation. Particular consideration was given to the method of insuring that patients receive medical service of the highest quality. The committee stressed the importance of strong and well selected medical advisers for the state rehabilitation agencies to assure that satisfactory standards for the selection of specialists and facilities are established and followed in the state programs. In order to maintain high standards, the desirability of providing fair and adequate remuneration for the necessary services was emphasized.

The particular problems associated with the rehabilitation of persons having psychiatric disabilities, tuberculosis or orthopedic, cardiac, visual and auditory handicaps were discussed at length by the specialists of the committee. The committee also made recommendations on the scope of physical restoration services, auxiliary services in the fields of medical-social work, nursing, psychiatric social work, physical and occupational therapy, and definition of the policies and plans for various groups of disabilities.

AMERICAN BAR ASSOCIATION COMMITTEE REPORTS ON PARTS OF WAGNER-MURRAY BILL (S. 1161) RELATING TO FEDERAL REGULATION OF MEDICINE

At the meeting of the American Bar Association held in Chicago, Aug. 23-26, 1943, the House of Delegates on August 26 adopted the following resolution:

Resolved, That the Board of Governors be requested to appoint immediately a special committee to study, analyze and investigate Senate bill 1161, and that the Board of Governors give publicity to the recommendations and findings of such special committee and the action of the Board of Governors thereon; be it further

Resolved, That the House of Delegates is opposed to any legislation, decree or mandate that subjects the practice of medicine to federal control and regulation beyond that presently imposed under the American system of free enterprise.[1]

In accordance with the foregoing resolution of the House of Delegates the undersigned committee was appointed by the Board of Governors.

ANALYSIS OF SENATE BILL 1161

The committee has given considerable study to title IX of the Social Security Act as amended by S. 1161 (title IX being herein sometimes referred to as section 11 of S. 1161 or as the Socialized Medicine bill). The entire bill covers 90 pages. It amends the Social Security Act approved Aug. 14, 1935 [2] by adding under new titles the following subjects:

I-A—Unified National Social Insurance System (p. 2);[3]
I-B—A National System of Public Employment Offices (p. 3);
II-A—Social Security Protection to Individuals Engaged in the Military Service (p. 26);
VIII-A—Unemployment Compensation Allowances on Termination of Military Service (p. 36);
IX—Federal Medical, Hospitalization and Related Benefits (p. 39);
IX-A—Federal Social Insurance Contributions (p. 58);
XII—Unified Public Assistance Program (p. 82).

While your committee is concerned only with title IX, having to do with federal medical, hospitalization and related benefits, it has been found necessary to give some study to title IX-A—Federal Social Insurance Contributions in order to estimate the amount of tax money and the number of individuals involved in the proposed socialized medical system.

1. American Bar Association Journal, October 1943, p. 602.
2. 49 Stat. at L. p. 620, 42 U. S. C. A., sections 301 et seq.
3. Page references are to the printed bill, S. 1161.

It is impossible for the general public to secure an accurate idea of the Socialized Medicine bill. Being a part of an extensive piece of proposed legislation, on other parts of which it is dependent, and prepared in a form which has become popular in the past ten years, being replete with involvement, cross references, new terminology, percentages and other confusing matters, the socialized medicine chapter leaves the reader in utter confusion as to its meaning or extent. As an example of the verbiage that causes such confusion we cite the following: The bill appears to entitle every individual who is currently insured and has been found by the board to be eligible for benefits under title IX in a current benefit year to receive general medical, special medical, laboratory and hospitalization benefits after the effective date of the title.

Who is "currently insured"?

". . . An individual shall be deemed to be 'currently insured' if it appears to the satisfaction of the board that (1) he had acquired not less than two quarters of coverage during the four calendar quarters immediately preceding the quarter in which he died or in which his disability began (excluding from such immediately preceding quarters any quarter for any part of which he was under a prior disability), or (2) during his eligibility period (as defined in title XI) he had been paid wages of (*a*) not less than $150, and (*b*) not less than $50 for each of not less than two calendar quarters." [Sec. 209(h) p. 24]

What is his "eligibility period"?

". . . 'Eligibility period' means the first four of the last six completed calendar quarters immediately preceding the first day of a benefit year." [Sec. 1101 (a)(7), p. 73]

At great pains and with the expenditure of considerable time your committee has undertaken to analyze the Socialized Medicine title and break it down into simple language. To this end it has set out (1) the authority of the Surgeon General, (2) the authority and powers of the Social Security Board and (3) the cost of the scheme.

The bill provides that every individual currently insured [4] shall be entitled to receive general medical, special medical, laboratory and hospitalization benefits. Every dependent wife and child of and living with an individual who is currently insured is likewise entitled thereto [S. 1161, sec. 901(b) p. 39]. This includes thirty days' hospitalization each year, subject to an increase to ninety days per annum if the Surgeon General of the Public Health Service and the Social Security Board find that the Medical Care and Hospitalization Account are adequate [ibid. sec. 902 p. 40].

Authority of the Surgeon General.—The Surgeon General is authorized or required

(*a*) To take all necessary and practical steps to arrange for the availability of the benefits and of services to those entitled to the same [5] [S. 1161, sec. 903(a) p. 40].

(*b*) To make and publish, with the approval of the Federal Security Administrator, such rules and regulations as may be necessary to enforce title IX [ibid. sec. 914 p. 55].

(*c*) To prescribe rules under which any physician legally qualified by a state to practice shall be qualified to furnish services [ibid. sec. 905(1) p. 44].

(*d*) To publish and make known in each area the names of general practitioners who have agreed to furnish their services [ibid. sec. 905(3) p. 44].

(*e*) To prescribe the maximum number of potential beneficiaries for whom a practitioner may undertake to furnish general medical benefit, which may be uniform nationally, or may be adapted to take account of relevant factors, as the Surgeon General may determine [ibid. sec. 905(10), p. 47].

(*f*) To prescribe rules and regulations under which every individual who is entitled to receive as a benefit services from a physician and who is permitted to choose from among those designated by the Surgeon General (except specialist services) may change his selection [ibid. sec. 905(2), p. 44].

(*g*) In any area where payment is on a per capita basis, to distribute on a pro rata basis among the practitioners selected in the area those individuals who have failed to make a selection, or who having made one have been refused by the practitioner [ibid. sec. 905(11), p. 47].

(*h*) To determine (with the Social Security Board) for any calendar year or part thereof that every individual entitled to benefits may be required by the physician furnishing the same to pay a fee with respect to the first service or with respect to each service in a spell of sickness or course of treatment, if such payment may be desirable to prevent or reduce abuses of entitlement to such benefit; to limit the application of such fees to home calls, to office visits or to both; to fix the maximum total amount of such fee payments in a spell of sickness or course of treatment, and to provide for differences in the size or total amount of fee payments for urban and rural areas and with regard for differences among states or communities [ibid. sec. 911(a), p. 51].

(*i*) To select and designate the specialists to serve and to determine the class of services each specialist shall furnish [ibid. sec. 905(4), p. 45].

(*j*) To approve payments from the Federal Social Insurance Trust Fund [6] to practitioners and specialists which shall be made according (A) to a schedule of fees, (B) on a per capita basis, (C) on a salary basis for part or whole time or (D) a combination or modification of all of these, according in each area as the majority of general medical practitioners so paid shall elect, subject to necessary rules and regulations of the Surgeon General. Payments may be nationally uniform or "may be adapted to take account of relevant factors" [ibid. sec. 905 (7)(8)(9), pp. 46, 47].

(*k*) To publish a list of participating hospitals [7] and revise the same from time to time by withdrawing therefrom existing hospitals or adding others [ibid. sec. 907(a), p. 49].

(*l*) To determine, with the approval of the Social Security Board, the amount to be paid for hospitalization benefit, which shall be not less than $3 and not more than $6 for each day of hospitalization, not in excess of thirty days, which an individual has had in a period of hospitalization; and not less than $1.50 and not more than $4 for each day of hospitalization in excess of thirty in a period of hospitalization; and not less than $1.50 and not more than $3 for each day of care in an institution for the care of the chronic sick. In lieu of such compensation, after approval by the Social Security Board, to enter into contracts with participating hospitals for the payment of the reasonable cost of hospital service, at rates for each day of hospitalization neither less than the minimum nor more than the maximum applicable rates specified in this subparagraph (*l*), such payment to be full reimbursement for the cost of essential hospital services, including the use of ward or other less expensive facilities [ibid. sec. 915(g), p. 57].

(*m*) To select hospitals for limited varieties of cases and institutions for the care of the chronic sick, and in doing so to take into account the purpose of such limited accrediting, the type and size of community which the institution serves, the availability of other hospital facilities, and such other matters as he may deem relevant [ibid. sec. 915(f), p. 56].

(*n*) To make findings of fact and decisions as to the status of any institution as a participating hospital [8] in accordance with general standards previously prescribed by him after consultation with the council [9] [ibid. sec. 907(b), p. 49].

(*o*) To negotiate agreements for supplies and commodities necessary for the benefits provided [ibid. sec. 903(b), p. 40].

(*p*) To limit (with the Social Security Board) for any calendar year or part thereof the cost of laboratory benefit which shall be borne by payments from the Trust Fund, and such limitation may be with respect to a class of services, supplies or commodities, with respect to maximum payments per beneficiary in a benefit year, with respect to a specified fraction of the cost or combinations thereof [ibid. sec. 911(b), p. 52].

(*q*) To determine what shall be included in laboratory benefits, including chemical, bacteriologic, pathologic, diagnostic and therapeutic x-ray, physical therapy, special appliances prescribed by a physician, and eye glasses [ibid. sec. 915(c), p. 55].

(*r*) To make provisions by which persons not entitled to benefits may use the services and institutions provided for the currently insured, for which the Trust Fund shall be reimbursed [ibid. sec. 903(b), p. 40].

(*s*) To negotiate agreements, approved by the Social Security Board, under which benefits may be furnished to individuals not entitled to the same for any period for which payments have been made, or assurances of such payments have been given by public agencies of the United States, of the several states or of their political subdivisions. The benefits shall be the same, so far as practical in each area, as those furnished to individuals entitled to such benefits [ibid. sec. 910(a), p. 50].

(*t*) Through agreement or cooperative working arrangement, use the services and facilities of other federal, state or municipal agencies [ibid. sec. 1108(b), p. 75].

(*u*) To negotiate agreements with public and private agencies or institutions or with private persons or groups, to utilize their services and facilities and to pay for the same [ibid. sec. 903(b), p. 40].

4. Any individual is deemed to be currently insured if it appears that (1) he had acquired not less than two quarters of coverage during the four calendar quarters immediately preceding the quarter in which he died or in which his disability began, or (2) during his eligibility period he had been paid wages of (*a*) not less than $150 and (*b*) not less than $50 for each of not less than two calendar quarters [ibid. sec. 209(h) p. 24]. "Eligibility period" means the first four of the last six completed calendar quarters immediately preceding the first day of a benefit year [ibid. sec. 1101(a)(7) p. 73].

5. There are two classes of benefits: (*a*) "general medical benefit" including all services generally performed by a practicing physician and (*b*) "special medical benefit" being services performed by a specialist with respect to any particular class of service [ibid. sec. 915(a)(b) p. 55]. No individual is entitled to any benefit if the illness or disability is covered by any workman's compensation law [ibid. sec. 909, p. 50].

6. The Federal Social Insurance Trust Fund consists of the securities held by the Secretary of the Treasury for the Federal Old-Age and Survivors Insurance Trust Fund and the amounts standing to the credit of the Federal Old-Age and Survivors Insurance Trust Fund on the books of the Treasury on Jan. 1, 1944, any other amounts as may be paid into or belong to the Trust Fund, and the contributions collected under title IX [ibid. sec. 969(a), p. 67].

7. A participating hospital is an institution providing all necessary and customary hospital services, which is found by the Surgeon General to afford professional service, personnel and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institution and to have procedures for the making of such reports and certifications as the Surgeon General and the Social Security Board may from time to time require, to assure that hospitalization benefit will be provided only to or on behalf of individuals entitled thereto [ibid. sec. 915(f), p. 56].

8. Any institution may file a petition with the Surgeon General to be included in the list of participating hospitals, the petition to set forth such information as the Surgeon General may deem necessary to establish that such institution meets the requirements of a participating hospital. Any institution whose petition the Surgeon General has denied may request a hearing with respect to the decision, and the Surgeon General shall grant such hearing and shall affirm, modify or reverse his prior decision [ibid. sec. 907(b), p. 49].

9. The National Advisory Medical and Hospital Council is appointed by the Surgeon General. The Council is authorized to advise the Surgeon General with respect to professional standards, designation of specialists, methods to stimulate high standards through coordination of services of practitioners, specialists, laboratories and so on and of services of practitioners with those of educational and research institutions, hospital and health centers; with respect to standards to apply to participating hospitals and the establishment and maintenance of a list of participating hospitals, adequate and suitable methods of paying for services, studies and surveys of the services furnished by practitioners and hospitals and of the quality and adequacy of such services, grants-in-aid for professional education and research projects, and establishment of special advisory, technical, local or regional boards, committees or commissioners [ibid. sec. 904 (a), pp. 41-3].

(*v*) To administer grants-in-aid to nonprofit institutions and agencies engaged in research or in undergraduate or postgraduate professional education, such grants-in-aid to be made with respect to each project (1) for which application has been received from a nonprofit institution stating the nature of the project and giving the reasons for the need of financial assistance in carrying it out, and (2) for which the Surgeon General finds that the project shows promise of making valuable contributions to the education or training of persons useful to or needed in the furnishing of medical, hospital, disability, rehabilitation and related benefits provided under the act, or to human knowledge with respect to the cause, prevention, mitigation or methods of diagnosis and treatment of disease and disability[10] [ibid. sec. 1111, p. 77].

(*w*) To report to and recommend legislation to Congress not later than two years after the law becomes effective with respect to the most effective methods of providing dental, nursing and other needed benefits not already provided for under the title, and as to expected costs for the same, and the desirable division of the costs between (1) the financial resources of the social insurance system and (2) payments to be required of beneficiaries receiving such benefits [ibid. sec. 912, p. 53].

(*x*) To appoint a board known as the National Advisory Medical and Hospital Council, of which the Surgeon General is chairman, consisting of sixteen members, each member to hold office for four years and receive $25 per diem for services in attending meetings and in the performance of other duties [ibid. sec. 904(a), p. 41].

(*y*) To establish necessary and sufficient hearing and appeal bodies to hear and determine complaints from individuals entitled to benefits, from practitioners who have entered into agreements and from participating hospitals, and to hear and determine disputes among practitioners and participating hospitals, and to take steps to remedy the grounds of complaint, if any [ibid. sec. 906, p. 48].

(*z*) To have all the powers conferred on the Social Security Board, by sections 205 and 206 of the Social Security Act as amended; and the provisions of subsections (e) and (f) of section 205 and section 208 shall be applicable in the same manner and to the same extent as they are applicable to title II of the Social Security Act[11] [ibid. sec. 1108(a), p. 74].

Authority and Powers of the Social Security Board.—(*a*) All agreements shall be negotiated by the Surgeon General and approved by the Social Security Board, except as to fixing rates for hospitalization [S. 1161, sec. 903(b), p. 40].

(*b*) The board is authorized to enter into compacts with the states, or with the political subdivisions thereof, for the purpose of extending medical and other benefits to the employees of such states or political subdivisions. Each such compact shall provide

(1) That the benefits shall be the same as for other employees covered by insurance programs;

(2) That the state or political subdivision shall pay the employers' and collect the employees' contribution;

(3) That the compact must be in effect at least five years before the state can give a two year notice to the Social Security Board of its purpose to terminate the compact;

(4) That all employees shall be covered by old-age, survivors, permanent disability, medical and hospitalization insurance, except that no employee shall be so covered while he is a beneficiary or contributory member to or possessor of an unrealized interest in any pension, annuity and benefit or retirement fund or any similar fund which is in existence at the date such compact is entered into or maintained by authority of any existing federal or state law [ibid. sec. 966(a)(b), p. 65].

(*c*) The board shall establish a Federal Social Security Advisory Council composed of men and women representing employers and employees in equal numbers and the public for the purpose of formulating policies and discussing problems relating to social security legislation and administration, and to insure impartiality, neutrality and freedom from political influence in the solution of such problems[12] [ibid. sec. 1112(a), p. 78].

The board may also establish such councils for any part of the Social Insurance System or for any geographic area of the United States [ibid. sec. 1112(b), p. 79].

Cost of Benefits.—The Medical Care and Hospitalization Account is established as a separate account within the Trust Fund, to which the managing trustee[13] shall credit amounts equivalent to—

(1) One fourth of the social insurance contributions paid in by employers and employees, amounting to 6 per cent of wages[14] payable by each class, or a total of 12 per cent.

(2) Three sevenths of (*a*) the contributions paid in by self-employed individuals, which is at the rate of 7 per cent of their remuneration not in excess of $3,000 per annum; (*b*) social insurance contributions payable by states and political subdivisions thereof, and by employees thereof equal on the part of each class to 3.5 per cent of wages, falling within the scope of a voluntary compact under section 966 [p. 65].

This account shall include also applicable shares of interest, penalties and additions to the contributions and a proportionate part of the earnings of the Trust Fund, determined in accordance with the average daily balance to the credit of this account [S. 1161, sec. 913(a) (b), p. 53].

The amount in this account shall be available only for the payment of or provision for benefits and for administrative expenses under title IX [ibid. sec. 913(e), p. 54].

A sum is appropriated sufficient for all necessary expenses in carrying out the duties imposed on the Social Security Board and the Surgeon General by the act, including the making of such studies and demonstrations and such provisions for the training of personnel as may be expected to improve the quality of the services and promote the efficient administration of title IX; and for the pay, allowances and travel expenses of commissioned officers (regular and reserve), noncommissioned officers, and other personnel assigned to duty in carrying out the purposes of title IX and in connection with the administration of grants-in-aid [ibid. sec. 1109, p. 75].

10. For these purposes there shall be available for each calendar year 1 per cent of the total amount expended for benefits from the Trust Fund, exclusive of unemployment insurance benefits, or 2 per cent of the amount expended for benefits under title IX, after benefits have been payable for not less than twelve months, whichever is the lesser. The amount under the 2 per cent provision is estimated to be $46,780,000 for 1942.

11. Section 205 (a) [42 U. S. C. A., section 405 (a)] authorizes the board to make rules and regulations and to establish procedures necessary or appropriate to carry out the provisions of the act, and to adopt reasonable and proper rules and regulations to regulate and provide for the nature and extent of the proofs and evidence and the method of taking and furnishing the same in order to establish the right to benefits hereunder. Section 205 (e) [42 U. S. C. A., section 405 (e)] provides that in case of contumacy by, or failure to obey a subpena served on any person, the Surgeon General may by application to the district court have such person cited and ordered to comply with such subpena, subject to punishment for contempt for his failure to comply with the order of the court. Under section 205 (f) [42 U. S. C. A., section 405 (f)] no person shall be excused from giving testimony on the ground that the same will incriminate him, but such person should not be prosecuted on account of any matter about which he is required to testify.

By Section 206 [42 U. S. C. A., section 406] the Surgeon General may prescribe rules and regulations governing the recognition of agents or other persons representing claimants before the Surgeon General and may, after due notice and opportunity for hearing, suspend or prohibit from further practice before it any such person, agent or attorney who refuses to comply with the rules and regulations prescribed by the Surgeon General. He may also prescribe the maximum fees which may be charged for services performed in connection with any claim before the Surgeon General, and a violation of such regulation shall be subject to a fine not exceeding $500 or by imprisonment not exceeding one year, or both.

By section 208 [42 U. S. C. A., section 408] any person making any false statement or representation or affidavit in connection with any application for any payments shall be punished by fine of not more than $1,000 or imprisonment for not more than one year.

12. The Advisory Council shall, from time to time, make findings and recommendations to the board, particularly concerning (1) the administration of the Social Insurance System with respect to self-employed, agricultural labor, domestic service, employees of nonprofit institutions and employees of federal, state and local governments; (2) the administration of federal medical, hospitalization and related benefits in areas in which facilities and personnel are not adequate; (3) the adequacy of the benefits provided under the Social Insurance System in relation to the wage levels, cost of living and employment patterns, particularly in the postwar period, taking into account the cost and any other relevant factors of any suggested alternatives; (4) the methods of financing and the amount and distribution of the contributions to the Social Insurance System in the postwar period [ibid. sec. 1112 (c), p. 79].

13. The Secretary of the Treasury [ibid. sec. 969 (b), p. 68].

14. "Wages" means all remuneration for employment except (*a*) that part in excess of $3,000 per annum, (*b*) the amount of any payment under a plan or system established by an employer which provides for payment on account of (1) retirement, (2) sickness or accident disability, medical and hospitalization expenses in connection with the same, (3) death (except under conditions providing other or substitute benefits), (*c*) dismissal payments not required to be made or (*d*) value of services exchanged for other services and other unimportant exceptions [ibid. sec. 962 (a), p. 59].

THE COST TO THE PUBLIC AND THE NUMBER OF PERSONS COVERED

From the face of the bill no one can estimate how much tax money is involved or how many people are covered; so your committee has sought information on which to base answers to these questions. Table 1, based on data provided by the Social Security Board and the Treasury Department, is self explanatory.

TABLE 1.—*Estimated Employment in United States,*[a] *Years 1940-1942* [b]

	1940		1941		1942	
	Number Employed (Millions)	Wages (Billions)	Number Employed (Millions)	Wages (Billions)	Number Employed (Millions)	Wages (Billions)
Total employment covered by old age and survivor insurance	40.5	$36.1	40.9	$45.4	44.9	$56.6
Total employed by state and local governments	[d]	[d]	3.3	3.7	3.3	3.7
Total employed under Railroad Retirement Act	1.2	2.1	1.3	2.5	1.4	3.1
Total "civilian employment" [a]	46.0	$44.0	48.8	$54.1	51.9	$67.6
Self employed:						
Farm owners and tenants			5.1		5.1	
Other			5.7		5.7	
Total self employed [c]			10.8	10.1	10.8	13.1
Total employment [a]			59.6	$64.2	62.7	$80.7

a. Does not include those listed in table 2.
b. Source: Social Security Year Book 1942, p. 26.
c. There may be an undetermined amount of duplication in total "civilian employment." It would not change the total to any appreciable extent, however.
d. We do not have the number of the total employed by the federal government and their wages for 1940. The total employed by federal, state and local governments for this year is 4.3 (millions) and the wages 5.8 (billions).

From table 1, if the Socialized Medicine bill had been in effect in 1942,[15] the following would have resulted:

Social Insurance Contributions.—(a) By employers and employees,[16] 7.168 billion dollars; (b) by self employed,[17] 0.917 billion dollars; total, 8.085 billion dollars; (c) by state and local governments and employees,[18] 0.259 billion dollars; total, 8.345 billion dollars.

Of the foregoing taxes there is required to be credited to the Medical Care and Hospitalization Account ¼ of (a), 1.792 billion dollars; ¾ of (b) and (c), 0.547 billion dollars; total, 2.339 billion dollars.

We come now to the number of people covered by the scheme: Total employed in industry, 44.9 million; total employed by state and local governments, 3.3 million; total employed under Railroad Retirement Act, 1.4 million; total self employed, 10.8 million; total covered, 60.4 million.

It should be kept in mind that the 3,000,000 federal employees are not included in the scheme by reason of section 962(b)(2) [p. 61], which in defining "employment" excludes services performed in the employ of the United States. The reason for this is that federal employees (in Washington) have their own medical system, which is maintained by a 5 per cent salary reduction.

15. There are so many variables to be considered, it is difficult to compare the number of those employed and the wages paid in 1943 with those in 1942. Nor are we able to secure the figures for 1943 from any governmental bureau. Among such variables are the following: Many women are being employed in war industries and in manufacturing plants to replace men who have entered the services. The wage rates of the women are considerably lower than those of the men whom they replace. This has a tendency to lower the average wage rate for 1943 as compared with 1942. In October 1943 the number of agricultural workers showed a decrease under October 1942 of about 1 million, owing largely to the absorption of workers in the Army. In manufacturing industries the average annual wage per worker in 1942 was $1,906; in 1943 it was $2,223, or an increase of 17.2 per cent. This is due, however, in large measure to overtime work by employees.
16. 12 per cent of wages [S. 1161, sec. 960, p. 58].
17. 7 per cent of income [ibid. sec. 963, p. 63].
18. 7 per cent of income; based on voluntary compacts with state governments [ibid. sec. 964, p. 64].

In 1940 there were 34,855,000 occupied dwelling units, or approximately that many families. In the same year there were 52,789,000 persons in the "labor force." [19] This means that there were about 1.51 members of the labor force for each household. Thus it is almost certain that practically every family had at least one member included in the labor force, either at work or seeking work.

Accordingly, if every individual worker is covered by this act (as it appears he may be if his earnings are at a prescribed minimum) coverage must include practically all families in the United States. So with virtually complete family coverage by the act there would be few or no patients left for physicians who prefer private practice to becoming a part of the Socialized Medicine scheme.

SENATOR WAGNER'S INTERPRETATION OF THE BILL

When Senator Wagner (and Senator Murray) introduced S. 1161 on June 3, 1943 Senator Wagner made the following statement with reference to title IX:

"Freedom of Medical Practice: There is no plan here, such as that lately considered in Britain, for a system of socialized medicine, with all doctors required to be salaried employees of the government. Unlike this British proposal, my bill assures complete freedom of choice of doctor and hospital by the patient, and freedom of medical practice and types of remuneration for the doctor and the hospital. No doctor is forced into the insurance system or forced on a salary status. Arrangements for obtaining medical, laboratory or hospital care would be essentially as they are now in this country, except that payment for the care and services would be out of the insurance fund, built up through the insurance premiums paid by the individual and his employer. Voluntary hospitals would, of course, be eligible to participate in the plan if they choose to do so and thus be enabled to expand their splendid community services. Nonprofit group medical or hospitalization plans may also be utilized in carrying out the program, and they would be in a position to offer supplementary health protection for families desiring more than the basic social insurance benefits guaranteed under the bill. In all its provisions this bill would promote the personal relations between doctor and patient and be adapted to the needs and practices of the individual community, and the wishes of the doctors in that community, in both rural and urban areas. Similar basic principles as to medical and hospital benefits and freedom of medical practices are embodied in a program recently put forward by the government of Canada, with the full accord of the Canadian Medical Association and the Canadian Hospital Council." [20]

TABLE 2.—*Occupations of Workers*

	Thousands
1. Agricultural workers, including sharecroppers	4,000- 5,000
3. Unpaid family workers in agriculture	3,000- 3,350
4. Domestic workers in private homes and fraternities	2,000- 2,200
6. Casual employees	750- 1,000
8. Workers in nonprofit organizations	700- 1,000
9. Students employed by schools and colleges in which enrolled	25- 40
10. Employees of foreign governments and their instrumentalities	15- 25
11. Student nurses and interns	5- 10
12. Persons engaged on work relief programs	1,750- 2,000
13. Fishermen employed on vessels of 10 tons or less (except halibut and salmon fishermen)	15- 20
14. Newsboys under age 18	275- 325
15. Other employees in miscellaneous occupations	100- 300
Total	12,635-15,270

Source: Social Security Year Book 1942, p. 26, table 8.

Senator Wagner's Statement Not Accurate.—Of course Senator Wagner does not have the time to engage in the exhaustive studies necessary to enable him to discuss fully the effect of socialized medicine in this country and throughout the world. He must of necessity depend on his staff to provide these studies for him. He doubtless depends also on others who are active in promoting the measure.[21] Those who have assisted the

19. U. S. Bureau of the Census.
20. Congressional Record **89**: 5344.
21. Inquiry from reliable sources in Washington indicates the probability that the actual designers and authors of S. 1161 are Isidore S. Falk and Wilbur J. Cohen, director and assistant director, respectively, of the Bureau of Research and Statistics of the Social Security Board, and Philip Levy, secretary to Senator Wagner.

Senator are not entirely accurate in some of their statements, and their conclusions and in some instances are entirely incorrect.

We point out the following inaccuracies in Senator Wagner's statement of June 3, 1943:

1. Senator Wagner states: S. 1161 is unlike the British proposal, which is the Beveridge plan with all doctors required to be salaried officers of the government.

The statement is misleading. Both plans look toward a system of medicine supervised, regulated and controlled by government. Under S. 1161 all doctors will be paid by the government, for in time there will be no private practice.

2. Senator Wagner states: There is complete freedom of choice of doctor by patient.

This is incorrect. If either the patient or the doctor named on the panel by the Surgeon General declines to accept the other, the patient is assigned to some other doctor.

3. Senator Wagner states: There is complete freedom of choice of hospital by patient.

This statement is incorrect. There is no provision for freedom of choice of hospital. The entire system is under regulation by the Surgeon General.

4. Senator Wagner states: There is freedom of medical practice for the doctor.

This is misleading. The plan is so extensive that in time there will be no private practice.

5. Senator Wagner states: There is freedom of types of remuneration for the doctor.

This is misleading. The doctor is forced on a salary or on a fee basis or on a combination of the two, as determined by the Surgeon General, who approves the fee tables.

6. Senator Wagner states: There is freedom of types of remuneration for the hospital.

This is incorrect. Hospital rates are determined by the Surgeon General with the approval of the Social Security Board.

7. Senator Wagner states: No doctor is forced into the insurance system.

This is misleading. He must go into the insurance system or be forced economically to cease the practice of medicine.

8. Senator Wagner states: No doctor is forced on a salary basis.

This is misleading. The doctor is forced on a salary or on a fee basis, or on a combination of the two, as determined by the Surgeon General.

9. Senator Wagner states: Arrangements for obtaining medical, laboratory or hospital care would be essentially as they are now in this country, except as to payment out of the insurance fund.

This is entirely incorrect. The whole medical system is supervised, regulated and controlled by government.

10. Senator Wagner states: Voluntary hospitals are eligible to participate in the plan.

This is misleading. They may participate if selected by the Surgeon General.

11. Senator Wagner states: The system would promote the personal relations between doctor and patient.

This is an expression of opinion. The experience of foreign countries shows an opposite result.

12. Senator Wagner states: The Canadian system recently proposed is similar to S. 1161 and has the support of the Canadian Medical Association and the Canadian Hospital Council.

This is incorrect and misleading. The Canadian plan provides for its adoption by the provinces (or states) with a local full time doctor in charge. Both the Canadian Association and the Canadian Council are sharply critical of the plan.

Let us analyze Senator Wagner's statement further:

(1) The British Medical Association, which is comparable to the House of Delegates of the American Medical Association, at its meeting on Sept. 21-23, 1943 considered the Beveridge plan, although there was no definite legislative proposal available for consideration. No doubt Senator Wagner had this plan in mind in making his statement of June 3, 1943. The Beveridge plan contemplates a complete system of state medicine, with salaried physicians, involving the entire abolition of private medical practice. The report of the plan provides that the administration shall be confided to local governments with the minister of health in general supervision.

The action of the association was limited to statements of principles and general positions. By a vote of 200 to 10 the resolution was adopted opposing the creation of a whole time salaried state medical service as not being in the best interest of the community.

The Representative Committee, which had been appointed to study the report, submitted an extensive report stressing, among other things, the necessity of free choice as between doctor and patient; that the loyalty and obligation of a doctor should be to the individual patient and to none other; that it was not in the public interest that the state should convert the medical profession into a salaried branch of central or local government service; and that the state should not assume control of doctors rendering individual or personal health service.[22]

It would therefore appear that the Beveridge plan retains elements of local control which do not exist in Senator Wagner's bill.

(2, 3) There is no "freedom of choice" of doctor by patient, as we know that term today. The statute permits every individual to select those from whom he shall receive services, but his selection must be confined to one or more physicians furnishing such services under the direction of the Surgeon General [S. 1161, sec. 905(1)(2), p. 44]. The patient may change his selection, but only according to rules and regulations prescribed by the Surgeon General [ibid. sec. 905(2), p. 44].

If a practitioner selected by any individual refuses to serve the latter, the individual may, with others, be "distributed" by the Surgeon General on a pro rata basis among the other practitioners [ibid. sec. 905(11), p. 47]. There is no provision for freedom of choice of hospital.

(4, 7, 8) It is true that under S. 1161 all doctors are not required to be salaried employees of the government. Doctors employed under the scheme may be paid fees, or both salary and fees, as the Surgeon General directs. "All" doctors may not be a part of the system, but the coverage is so great that little if any practice is left for the doctor who does not wish to become a part of the system.

(5) There is no freedom of remuneration for the doctor. The Surgeon General has full authority to approve payments to practitioners according to a schedule of fees, or on a per capita basis, or on a salary basis for whole or part time, or a combination or modification of all these. The statute [ibid. sec. 905(7), p. 46] on its face appears to give the practitioner some freedom, but the ultimate authority is in the Surgeon General, as all payments are "subject to such necessary rules and regulations as may be prescribed" by the Surgeon General.

(6) Nor has the hospital any freedom with respect to remuneration. The Surgeon General [ibid. sec. 907(a), p. 49] with the approval of the Social Security Board determines the amount to be paid for hospitalization, varying from $1.50 to $6.00 per diem [ibid. sec. 915(g), p. 57].

(10) Voluntary hospitals are eligible, but subject to all the rules and regulations governing participating hospitals [ibid. sec. 907(a), p. 49; sec. 915(f)(g), pp. 56-57].

(11) Under our system of government and American way of life a plan of medicine directed from Washington would not "promote the personal relations between doctor and patient, and be adapted to the needs and practices of the individual community, and the wishes of the doctors in that community, in both rural and urban areas, . . ." It is inevitable that such a plan would seriously disturb the existing intimate relationship between doctor and patient.

(12) It is not correct that similar basic principles as to medical and hospital benefits and freedom of medical practices are embodied in a program recently put forward by the government of Canada, with the full accord of the Canadian Medical Association and the Canadian Hospital Council. The Dominion of Canada recognizes and respects its constitutional limitations. S. 1161 is utterly beyond the powers of Congress.

For Senator Wagner to compare his bill favorably with the proposed Canadian measure is not justified. The Canadian plan provides for the adoption by each province of a model bill which the Dominion has drafted for the guidance of the provinces in framing their legislation. The Canadian government has no constitutional power to impose such a plan. It only proposes the plan and extends a subsidy to the provinces

22. J. A. M. A. **123**: 777 (Nov. 20) 1943.

which adopt it. The question arises among the provinces whether or not the Dominion by this indirect procedure is not interfering with the autonomy of the provinces, by encroaching on the right given them under the British-North America Act to legislate as they see fit on matters of health.

Another fundamental difference between S. 1161 and the Canadian plan is in its administration. Under S. 1161 the entire plan is administered by one man from Washington. In each Canadian province the act would be administered by a commission appointed by the Lieutenant-Governor-in-Council. Its chairman must be a doctor of medicine. He would be its chief executive officer and would have supervision over all other officers appointed to carry out the work of the commission. His fellow members on the commission would be men or women representative of the various professions rendering service under the act, including hospitals, and of industrial workers, employers, agriculturists and such other groups as it may be deemed desirable to recognize. The chairman would devote his whole time to the work of the commission and would be its only salaried member. Other members would be paid a per diem allowance for attending meetings. All persons employed to conduct the work of the commission would rate as civil servants and must be appointed in the manner prescribed by the Civil Service Act.

Thus the system in the provinces is removed from over-all control from the seat of government and there remains to it all the elements of home rule.

The insured may select from the list of practitioners who have agreed to attend insured patients any one he wants as his medical adviser, subject only to the willingness of the latter to accept him as a patient. The total cost per annum would be $250,000,000.[23] This figure is to be compared with approximately $3,000,000,000 in this country.

MEDICAL SERVICE IN THE UNITED STATES AND THE EFFECTS OF THE MEASURE ON SUCH SERVICE

1. Under the medical care now provided in the United States the highest level of health and the lowest death rate ever known under similar conditions are being maintained.

2. There are being developed in this country and under our system of free enterprise many plans for providing adequate medical care without paying the price of socialized medicine. These include group and hospital insurance and Blue Cross plans under principles approved by the medical profession. The Blue Cross plan beginning in 1933 and now covering more than fifteen million people provides for the moderate means class, on which hospital bills fall heavily.

3. The indigent, who are most in need of free medical care, are not covered by S. 1161.

4. Forty-two per cent of the expenditures for hospital services and for doctors' services rendered hospital patients in 1942 were either tax supported or otherwise without cost to the patient and without recourse to federal regulation and control as proposed.

5. Of all like plans now in effect in foreign countries, none is comparable with the plan proposed by S. 1161 except the Russian system, which involves the complete socialization and regimentation of medicine. Such a pattern, if followed in this country, will inevitably produce a like result. The physician will become merely an unambitious federal employee or a politically ambitious doctor.

6. Contrary to assertions of the advocates of the measure, the plan covers practically the entire population of the United States except the indigent.

7. To safeguard a minimal percentage of the population which has difficulty in obtaining complete medical service, the bill would put all the people in a medical strait jacket under the supervision of the federal government for an alleged service which the vast majority either do not require or are able to provide for themselves.

8. The measure will inevitably lessen the interest of the physician in his patient as an individual and dull the incentive to produce the best results. The patient will become the guinea pig supplied by the government as the excuse for the payment of subsidies to a controlled profession for its routine services. This would disturb the social order of which both are members and result in vital loss both to the community and to the doctor.

9. The measure will subject to bureaucratic control and supervision the intimate and confidential relationship between doctor and patient and make confidential information resulting therefrom available to employees of the government.

10. Medical education and training, which have attained an unequaled standard of excellence in institutions conducted under our system of free enterprise, would under S. 1161 be subsidized, regulated and controlled by government.

11. Within the past twenty years the center of medical progress has moved from Germany, Austria and England, which have adopted some form of state medicine and which previously served as centers of postgraduate medical education, to the United States, and we now find physicians and hospital administrators coming for guidance and inspiration to this country, where no form of state medicine is in effect.

CONCLUSION

The American Bar Association is limited to an expression of opinion and judgment with respect to those fields which relate to the administration of justice and which directly affect the safeguards and protection of the rights and liberties of the citizens of this country. Under normal circumstances, therefore, it is not the function of this association to attempt to influence substantive legislation by the Congress of the United States. But when under the pretext of the general welfare legislation is proposed in Congress which either inadvertently or with deliberate subtlety constitutes a direct attack on the rights and liberties of the citizens of this country, it becomes the duty of this association actively to voice its objections, a summary of which is as follows:

1. Local self government must be preserved in our federal system. State governments directly responsible to the will of the people are best adapted to exercise such supervisory control as may be instituted over the health and medical care of our citizens.

2. S. 1161 seeks to invest in the Surgeon General, who is not an elected servant of the people and who is not amenable to their will, the power arbitrarily to make rules and regulations having the force and effect of law which directly affect every home.

3. The measure furnishes the instrumentality by which physicians for their practice, hospitals for their continued existence and citizens for their health and that of their families can be made to serve the purposes of a federal agency.

4. The bill fails to safeguard the rights of patients, citizens, hospitals or doctors with respect to disputes arising or rights denied through the arbitrary or capricious action of one man.

5. The bill fails to provide for any appeal to any court from the action of the Surgeon General.

6. The vicious system whereby administrative officials judge without court review the actions of their subordinates in carrying out orders issued to them is extended in this bill to a point foreign to our system of government and incompatible with the adequate protection of the liberties of the people.

The Constitution of the United States is designed to protect the citizens of this republic in the exercise of the rights of free men. The provisions of that instrument can be rendered impotent when our citizens, for the sake of an apparent immediate benefit, surrender to their government such direct control over their lives that government, by imposing a constant fear on them of having those benefits withheld or withdrawn, can compel from them obedience and subservience to its dictates.

Respectfully submitted,

W. E. STANLEY, Chairman,
WILLIAM LOGAN MARTIN,
CLEMENT F. ROBINSON.

Feb. 25, 1944.

33. Health Insurance for Canada, Research Bureau Pharmaceutical Manufacturers' Association, Toronto, pp. 3, 4, 8, 9, 10, 19.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Popular Medical Lectures.—The sixty-second course of popular medical lectures will be held at Lane Hall, Stanford University School of Medicine, San Francisco. The group will include the following speakers, all of San Francisco:

Dr. William H. Northway, Treatment of Infantile Paralysis, March 17.
Dr. Albert V. Pettit, Caudal Anesthesia in Obstetrics, March 31.
Nina Simmonds, Sc.D., Nutrition: One Factor in the Health Program, April 14.
Dr. Horace Gray, Psychologic Types and Marriage, April 28.

Special Service Fund.—The San Francisco County Medical Society has established a special service fund to assist service men and their families in case of need. The funds will be used not only to help returning members during their time of readjustment but to help wives, families and service widows at any time before peace comes. Any one knowing of the need of a member's family is asked to notify Dr. Dohrmann K. Pischel, San Francisco, chairman of the special service fund committee.

Hamilton Anderson Named Professor of Pharmacology.—Dr. Hamilton H. Anderson, recently returned on the S. S. *Gripsholm* from his position as professor and head of the department of pharmacology, Peiping Union Medical College, Pekin, China, has been appointed professor of pharmacology at the University of California Medical School, San Francisco. The appointment, effective February 1, fills the vacancy that occurred when Chauncey Leake, Ph.D., resigned to become vice president and dean of the University of Texas Medical Branch, Galveston. Dr. Anderson graduated at the University of California Medical School in 1930 and served as a member of the staff until 1937, when he joined the Council on Medical Education and Hospitals of the American Medical Association. He resigned this position to accept the Rockefeller Foundation appointment as professor of pharmacology at Peiping University.

CONNECTICUT

Yandell Henderson Dies.—Yandell Henderson, Ph.D., an authority on gases and professor of physiology emeritus, Yale University, New Haven, died in Scripps Memorial Hospital, La Jolla, Calif., February 18, aged 70. Dr. Henderson had been suffering from an intestinal ailment for a year.

State Society Plans New Home.—At a special meeting of the house of delegates of the Connecticut State Medical Society in December it was decided to establish a permanent home in New Haven. The trustees of the building fund are now working on the acquisition of properties that might be available for suitable headquarters.

DISTRICT OF COLUMBIA

Annual Graduate Course in Ocular Surgery.—The George Washington University School of Medicine will conduct its seventh annual postgraduate course in ocular surgery, pathology and orthoptics, April 24-29. The instructors in the pathology course will include Col. James E. Ash, M. C., U. S. Army, curator of the Army Medical Museum, Major Alfred Golden, M. C., A. U. S., Helenor Wilder and Lawrence Ambrogi. The orthoptics course will be conducted by Dr. William Thornwall Davis, Dr. Ernest A. W. Sheppard, Dr. Frank D. Costenbader, Louisa Wells, Mary E. Kramer, Dorothy R. Bair and Mildred Brown. Additional information may be obtained from Miss Wells, 927 17th Street N.W., Washington.

GEORGIA

Personal.—Joseph C. Bequaert, Ph.D., and Dr. Everett P. Veatch, Bolahun, Liberia, recently went by plane to Liberia to carry on six months' research on African sleeping sickness.

Full Professors at Emory.—Emory University School of Medicine, Atlanta, has conferred full professorships on:

Dr. Cosby Swanson, professor of dermatology.
Dr. William Walter Young, professor of neurology and psychiatry.
Dr. Madison Hines Roberts, professor of pediatrics.
Dr. Frederick G. Hodgson, professor of orthopedic surgery.
Dr. Milus K. Bailey, professor of urology.
Dr. Grady E. Clay, professor of ophthalmology.
Dr. James Calhoun McDougall, professor of otorhinolaryngology.

ILLINOIS

Society News.—Dr. Leon Unger, Chicago, will discuss "Allergies, Hay Fever and Asthma" before the Kankakee County Medical Society, Kankakee, March 14.——The Will-Grundy County Medical Society was addressed March 10 in Joliet by Dr. Newell C. Gilbert, Chicago, on "Rheumatic Heart Disease."

Chicago

Dr. Major to Address Medical History Society.—Dr. Ralph H. Major, Kansas City, Mo., professor of medicine and lecturer in the history of medicine, University of Kansas School of Medicine, will deliver a lecture in the assembly room of the Institute of Medicine of Chicago April 4 under the auspices of the Society of Medical History of Chicago. The subject of his illustrated address is "Hippocrates and the Island of Cos."

KANSAS

Personal.—Dr. Fred H. Rhoades, Hanover, has been appointed health officer of Washington County.——Dr. Orlin P. Wood, Marysville, was appointed health officer of Marshall County to succeed Dr. Enoch Schumann, Blue Rapids.

Health Department in New Home.—The Kansas City-Wyandotte County Health Department is now located in its new home at 619 Ann Avenue. The three story red brick building contains accommodations for administrative offices. On the second floor are quarters of the sanitarians and milk inspectors; the laboratory, clinic and health inspection rooms are housed in the basement. William H. Pickett, surgeon, U. S. Public Health Service Reserve, is director of health of the city-county health unit.

MASSACHUSETTS

Personal.—Dr. Robert B. Osgood, John B. and Buckminster Brown professor of orthopedic surgery emeritus, Harvard Medical School, Boston, was granted honorary fellowship in the Royal College of Surgeons of England at a ceremony in the British Embassy in Washington, November 8.

Tufts Alumni Dinner.—The annual meeting and dinner of the Tufts Medical Alumni Association will be held on March 29 at the Copley Plaza Hotel, Boston. The guest speaker will be Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, who will discuss "Probable Changes in Practice of Medicine Harmful to Patient If Bills Now Pending in Washington Become Law." Other speakers will include Leonard Carmichael, LL.D., president of Tufts College, on "Our First Fifty Years as a Prelude to Greater Things," Dr. Alonzo K. Paine, Boston, president of the alumni association, Capt. A. Warren Stearns (MC), U. S. Naval Reserve, dean-on-leave, and Dr. Karl T. Phillips, Putnam, Conn.

MICHIGAN

Personal.—George B. Darling, Dr.P.H., who recently resigned as president and comptroller of the W. K. Kellogg Foundation, Battle Creek (THE JOURNAL, Nov. 27, 1943, p. 849) is now executive secretary of the committee on military medicine of the division of medical science of the National Research Council, Washington, D. C.——Dr. Roger V. Walker has been appointed a member of the Detroit Board of Health to succeed the late Dr. Frank A. Kelly.——Dr. James Milton Robb recently presented to the Wayne University College of Medicine, Detroit, a fund for the use of the Alpha Omega Alpha Scholarship and Lectureship Foundation.

MISSOURI

License Suspended.—The license to practice medicine of Dr. Leo J. Barken, University City, was suspended by the state board of health, January 24, for a period of two years. The suspension is based on the conviction of Dr. Barken in the federal court for violation of the Harrison Narcotic Act.

The Narr Fellowship Foundation.—The Frederick C. Narr Fellowship Foundation has been incorporated to carry on the activities of the late Dr. Narr in providing financial assistance to young medical students and interns. Dr. Robert Lee Hoffmann is president of the corporation, Dr. Fred B. Kyger treasurer and Dr. Oliver S. Gilliland secretary. Trustees are Drs. Robert C. Davis, Sam E. Roberts and Ira H. Lockwood, all of Kansas City. According to the *Weekly Bulletin* of the Jackson County Medical Society, a fund of $2,000 now available will be augmented to continue Dr. Narr's activities. In 1923 Dr. Narr became head of the Williams Volker Laboratory of Research Hospital, Kansas City, a position he held until his death on Sept. 2, 1943. Because of his full time activity with the hospital he became chairman of the committee on residents and interns and in this capacity personally gave

financial assistance to these men to help place them in the proper position in the medical world. In many instances he lent money, signed notes of security and counseled. The new fellowship foundation will attempt to extend this work. The proformat decree of incorporation of the foundation, effective January 31, states that the new group's purposes are:

To aid and assist medical students, interns, residents, fellows, in continuing the study of medicine and surgery, and the pursuit of any and all allied branches of the medical science and art, including research, by furnishing to such individuals, as a board of trustees held from time to time, designate gifts, loans or advances to pay tuition, or other expenses incurred by or for such individuals in the attendance of medical school, hospitals, and research institutions.

MONTANA

Personal.—Dr. Albert D. Brewer has resigned as city-county health officer of Bozeman and Gallatin County to become staff physician at the Montana State Tuberculosis Sanitarium, Deer Lodge.——Mr. Herbert T. Walworth, for three years director of the division of industrial hygiene, Montana Department of Public Health, Helena, has resigned to become industrial engineer of the Tennessee Department of Public Health, Nashville.

NEW YORK

Graduate Lecture on Tropical Medicine.—Morton C. Kahn, Ph.D., associate professor of public health and preventive medicine, Cornell University Medical College, New York, will lecture on "Mosquito Borne Diseases" before the Saranac Lake Medical Society, April 5, at Saranac Lake. The lecture is sponsored cooperatively by the state department of health and the state medical society.

New York City

Instruction in Tropical Medicine.—A course in certain aspects of tropical medicine will be conducted at the DeLamar Institute of Public Health, Columbia University College of Physicians and Surgeons, March 20-May 13. Additional information may be had from the institute at 600 West 168th Street, New York 32.

The Sixth Harvey Lecture.—John W. Oliphant, Surgeon, U. S. Public Health Service, division of infectious diseases, National Institute of Health, Bethesda, Md., will deliver the sixth Harvey Society Lecture of the current series at the New York Academy of Medicine on March 16. His subject will be "Jaundice Following Administration of Human Serum."

Personal.—Dr. Condict W. Cutler Jr., director of surgery at Goldwater Memorial Hospital on Welfare Island and an alumni trustee at Columbia University, has resigned to accept a commission as lieutenant colonel in the army medical corps. ——Dr. Israel Leopold Glushak has been invited to open a reconstruction surgical clinic in connection with the private hospital of Dr. Manuel de la Pila Iglesias at Ponce, Puerto Rico. This clinic will devote a large portion of its services to the subnormal income groups in Puerto Rico, the territorial department of the government assuming the expense of their hospitalization, according to the *Journal* of the Medical Society of the County of New York.

Postwar Emergency Fund.—The Bronx County Medical Society has agreed to assess its members to promote the collection of funds to aid members returning from military service to reestablish their private practice in the postwar period of readjustment. The action was approved in a resolution passed by the society. The fund will be administered by a loan committee of the group and will be known as the Post War Emergency Loan Fund. It was decided further that at the end of a period of emergency, as determined by the society, the fund will be known as the general fund of the Bronx County Medical Society, to be used for purposes beneficial to the society as determined by a two thirds vote of the membership present at any society meeting.

NORTH CAROLINA

Hospital News.—The Guilford General and the Burrus Memorial hospitals, High Point, were merged recently under the name of High Point Memorial Hospital. The Burrus Memorial has been designated as the Boulevard Unit and the other as the Washington Street Unit. J. P. Richardson, administrator of the Burrus Memorial, is director of the combined unit, and W. R. Peters, business manager of the Guilford General Hospital, will become business manager of the new institution.

Dr. Tinsley Harrison Goes to Texas.—Dr. Tinsley R. Harrison, professor of medicine at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, has been appointed dean of Southwestern Medical College of the Southwestern Medical Foundation, Dallas, effective immediately. Dr. Harrison will also serve as executive professor of experimental medicine and professor of medicine. He graduated at Johns Hopkins University School of Medicine, Baltimore, in 1922. He is a past president of the American Society for Clinical Investigation and is now chairman of the Section on Experimental Medicine and Therapeutics of the American Medical Association. According to Mr. Mac F. Cahal, executive secretary of the foundation, additional temporary buildings will be constructed near the site of the projected medical center to house the department of experimental medicine. Additional professors and research workers will be employed for the new department. Dr. Donald H. Slaughter, Dallas, formerly acting dean of the medical college, will remain as dean of students.

OHIO

Personal.—Dr. John Srail has resigned as superintendent of the Tuscarawas Valley Sanatorium, New Philadelphia, effective February 1, to become clinician for the Washington Tuberculosis Association at Seattle.

University News.—The Research Foundation at Ohio State University, Columbus, has made available grants of $35,000 to the university to stimulate and foster research in the basic science; $5,000 will be available for surgical and medical research.

OKLAHOMA

Society News.—The Pottawatomie County Medical Society was addressed on March 7 among others by Dr. Percy S. Pelouze, Philadelphia, on "Control of Gonorrhea from a Public Health Standpoint."——The Oklahoma City Internist Association sponsored a clinic at the University Hospitals on February 22.

Personal.—Dr. Felix T. Gastineau has been appointed acting director of the student health service at the University of Oklahoma, Norman, succeeding Dr. William A. Fowler, who has gone to the University of Arkansas, Fayetteville.——Anderson Nettleship, P. A. Surg., U. S. Public Health Service Reserve, Bethesda, Md., has been appointed associate professor of pathology at the University of Oklahoma School of Medicine, Oklahoma City.

OREGON

Tuberculosis Program.—X-ray equipment has been purchased with funds subscribed by the Oregon Tuberculosis Association, the city of Portland and Multnomah County, to be housed in a clinic which will be operated by the Portland City Health Department. When the program gets under way the clinic will supervise follow-up case finding among family contacts of the tuberculous persons found in the Portland area by the recently created state division of tuberculosis control.

University News.—The University of Oregon Medical School, Portland, has purchased the Portland Medical Hospital on Marquam Hill to use as a dormitory to house student nurses, in keeping with the provisions of the cadet nurse corps program. Dr. Matthew C. Riddle, associate professor of medicine, and Harry J. Sears, Ph.D., professor of bacteriology at the university, are studying tropical diseases in Central America as an aid to wartime medical instruction. Dr. Riddle flew directly to Central America, but Dr. Sears will spend two months in the Army Medical School, Washington, D. C., before proceeding to Costa Rica, Honduras and Guatemala.

RHODE ISLAND

Advisory Council on Health.—On February 5 Gov. J. Howard McGrath activated a thirty-five member state voluntary advisory council on health to carry on an overall survey of health facilities and needs of the state. The program is the result of a suggestion made recently by Dr. Emery M. Porter, past president of the Providence Medical Association, that a statewide survey be conducted by a nonpartisan, representative council. The suggestion of Dr. Porter to create a twenty-five member council by the state medical society was endorsed by the society, but it was agreed to acquiesce in allowing the governor to name the council which he suggested. Using Dr. Porter's outline as a basis, the governor has enlarged the list to include representatives of insurance, the veterans, pharmacy and osteopathy. The new council includes eleven doctors of medicine, including the state director of health and one doctor representing the state hospital association, a dentist, a nurse, an osteopathic physician, two representatives of veterans' organizations, two representatives of organized labor, two representatives of industry, three insurance representatives, one of the Blue Cross, one of private insurance and one of the state director of insurance, two

representatives of social agencies, two attorneys at law, one representative of pharmacy, two representatives of the state department of social welfare and five representatives of the public generally, including two clergymen, a banker and an executive secretary. Dr. Michael H. Sullivan, Newport, president of the state medical society, is chairman of the council, Dr. Elihu S. Wing, Providence, vice chairman and Mr. Glen Leet, state administrator of public assistance, department of social welfare, Cranston, executive secretary. Other members of the council include:

Frank J. Benti, president, Rhode Island State Congress of Industrial Organization, Providence.
Frederick S. Blackall Jr., president, Taft-Pierce Mfg. Co., Cumberland.
Rt. Rev. Msgr. Peter E. Blessing, Providence.
Rev. Arthur H. Bradford, Pastor, Central Congregational Church, Providence.
J. Austin Carroll, state commissioner of insurance, Providence.
Thomas W. Clune, D.D.S., Cranston.
Edward L. Coman, insurance executive, South Kingstown.
Miss Nellie R. Dillon, R.N., president, Rhode Island District Nursing Association, Providence.
Dr. John E. Donley, Providence.
John E. Farrell, executive secretary, Rhode Island Medical Society, East Providence.
Dr. Albert H. Jackvony, president, Providence Medical Association, Providence.
Dr. Henry E. Gauthier, Woonsocket.
Christopher Hopkins, president, Rhode Island State Branch, American Federation of Labor, Providence.
Walter F. Farrell, president, Union Trust Co., Providence.
Dr. John P. Jones, Wakefield.
Ernest I. Kilcup, president and treasurer, Davol Rubber Co., Barrington.
Mrs. Susan V. Lamb, chairman of legislative committee, State Association of Local Directors of Public Welfare, West Warwick.
Judge Edward L. Leahy, Director, State Department of Finance, Bristol.
Arthur J. Levy, president, Providence Council of Social Agencies, Cranston.
Robert O. Loosely, executive director, United War Fund, Providence.
Dr. Edward A. McLaughlin, State Director of Health, Providence.
Eugene U. Messier, State Department Commander, Veterans of Foreign Wars, Central Falls.
Cornelius C. Moore, Attorney at Law, Newport.
Alexander Pausley, D.O., Providence.
Dr. Herman C. Pitts, chairman, medical economics committee, Rhode Island Medical Society, Providence.
Dr. Dennett L. Richardson, president, Hospital Association of Rhode Island, Providence.
W. Henry Rivard, Pharm.D., Dean, Rhode Island College of Pharmacy & Allied Sciences, Providence.
Dr. Arthur H. Ruggles, superintendent, Butler Hospital, Providence.
Stanley H. Saunders, executive director, Hospital Service Corporation of Rhode Island, Providence.
Dr. Stanley Sprague, Pawtucket.
Harold B. Tanner, attorney at law, Providence.
George E. Withington Jr., commander, American Legion Department of Rhode Island, Providence.

SOUTH CAROLINA

Medical Society Buys House for Nurses' Home.—The Medical Society of South Carolina, the Charleston County Medical Society, as trustee under the will of Thomas Roper, has purchased a house on the corner of Calhoun Street and Ashley Avenue, newspapers report. The residence will be used as a supplementary nurses' home to assist in the government's program to accelerate the training of nurses for army, navy and civilian needs, as well as to care for the increase of patients at Roper Hospital, Charleston.

TEXAS

Appointments to Southwestern Faculty of Medicine.—New appointments to the full time faculty of Southwestern Medical College of the Southwestern Medical Foundation, Dallas, include:

Simon Edward Sulkin, Ph.D., formerly instructor in bacteriology and immunology at Washington University School of Medicine and director of the virus laboratory, St. Louis Health Division, associate professor of bacteriology.
Dr. Atticus J. Gill, formerly assistant professor of pathology, University of Tennessee College of Medicine, Memphis, assistant in pathology.
Robert Merrett Pike, Ph.D., formerly bacteriologist and assistant director of Bassett Laboratories, Cooperstown, N. Y., assistant professor of bacteriology.

Sixty-one students will be graduated from the new school on March 20.

Anderson Cancer Hospital Dedicated.—The M. D. Anderson Hospital for Cancer Research, Houston, was dedicated February 17. Dr. Ernst W. Bertner, acting director of the hospital, presided at the ceremonies, which included the following speakers:

Hon. Coke Stevenson, governor of Texas.
John H. Bickett Jr., chairman, board of regents, University of Texas Medical Branch, Galveston.
Col. W. B. Bates, board of trustees, M. D. Anderson Foundation.
Homer P. Rainey, Ph.D., president, University of Texas.
Hines Baker, chairman, development board, University of Texas.
Chauncey Leake, Ph.D., vice president and dean, University of Texas Medical Branch, Galveston.
Dr. Bowman C. Crowell, Chicago, associate director, American College of Surgeons.
Dr. Fred W. Stewart, acting director, Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York.
Dr. Frank E. Adair, chief surgeon, Memorial Hospital.
Dr. Lauren V. Ackerman, director, Ellis Fischel State Cancer Hospital, Columbia, Mo.
Dr. Hugh H. Young, director, Brady Urological Institute, Johns Hopkins Hospital, Baltimore.
Clarence C. Little, Sc.D., managing director, American Society for the Control of Cancer, New York.
Hon. Otis Massey, mayor of the city of Houston.
Dr. Charles S. Venable, San Antonio, president, Texas State Medical Association.

The hospital is located temporarily at 2310 Baldwin Avenue in the former home of the late Capt. James A. Baker. Activities at the new hospital were to start March 1. The project is financed jointly by the state of Texas and the M. D. Anderson Foundation. It will function under the direction of the University of Texas. It was initiated when the forty-seventh legislature created a Texas state cancer hospital and a division of cancer research under the control and management of the University of Texas. An appropriation of $500,000 was made for the location, equipping and establishing of the hospital, half earmarked for building and equipment, the remainder for employing a staff and for research, study, experiments, treatment and maintenance. This appropriation was matched by a $500,000 gift to the university by the Anderson Foundation to supplement the legislative funds available for building and equipment. In addition the foundation offered to provide a site for the hospital. Eventually the site will be in the medical center that is being projected for a 134 acre site adjacent to Hermann Park, which the foundation has purchased from the city of Houston. When the war intervened it was decided to use the former home of Captain Baker as a temporary location in order that the research work might be started. One hundred and twenty-five beds will be available in Hermann Hospital eventually, but for the time being only 25 hospital beds will be available there. The service will include a diagnostic center, to which any physician in the state can send questionable tissue for diagnosis, and a statewide necropsy service. Patients from all over the state will be admitted for treatment. Only those will be accepted who have a chance to be cured. Eventually the hospital will accept part pay and full pay patients as well as indigents, but until the program gets fully under way only indigents will be admitted. Admission of indigents will be on certification of their county judge after examination by a physician and after investigation by the social service staff of the hospital.

VERMONT

University News.—Bennett C. Douglass, Ph.D., professor of education at the University of Vermont, Burlington, recently conducted several conferences with the faculty of the college of medicine on teaching and teaching methods. Dr. Louis S. Goodman, professor of pharmacology and physiology at the medical school, lectured before the Northeastern County Medical Society, February 23, on "Recent Advances in Drug Therapy."

GENERAL

Special Society Election.—Dr. Rolla E. Dyer, Bethesda, Md., was chosen president-elect of the annual meeting of the American Society of Tropical Medicine recently and Dr. Wilbur A. Sawyer, New York, was inducted into the presidency. Other officers include Dr. Harold W. Brown, New York, vice president, and Dr. Joseph S. D'Antoni, New Orleans, secretary-treasurer. Col. Charles F. Craig, M. C., U. S. Army, retired, 239 West Lullwood Avenue, San Antonio, Texas, is the editor of the *American Journal of Tropical Medicine.*

Federation of American Societies.—The Federation of American Societies for Experimental Biology, by vote of the executive committee, will not hold an annual meeting in 1944. Through the medium of the *Federation Proceedings,* however, provision will be made for the publication of abstracts of papers which would have been presented if it had been feasible to hold such a meeting. Similarly provision will be made for the full publication of papers contributed to several symposiums. This arrangement corresponds to that which was made in 1943, when the annual meeting was canceled. It was announced that a meeting will be held in Cleveland May 8-10, 1945 unless some unforeseen difficulty arises. The federation is composed of the American Physiological Society, American Society of Biological Chemists, American Society for Pharmacology and Experimental Therapeutics, American Society for Experimental Pathology, American Institute of Nutrition and the American Association of Immunologists.

War Conference on Industrial Health.—A war conference on industrial health, comprising the 1944 annual meetings of several national organizations concerned with industrial hygiene, will be held at St. Louis May 9-14 in the New Jef-

ferson Hotel. The National Conference of Governmental Industrial Hygienists will meet all day on May 9. The American Industrial Hygiene Association meetings will begin on May 10 and continue through the morning of May 11. The American Association of Industrial Physicians and Surgeons will start its sessions on May 11 with clinics and meet in the afternoon with the American Industrial Hygiene Association. The American Association of Industrial Nurses will hold sessions on May 12, 13 and 14. A banquet will be held on May 11 for all members of the four cooperating associations. The Industrial Hygiene Division of the U. S. Public Health Service will conduct a seminar for engineers and chemists engaged in industrial hygiene work in federal and state agencies May 4-8 in St. Louis preceding the conference. Additional information may be obtained from Senior Sanitary Engineer J. J. Bloomfield, chief, field operations section, Industrial Hygiene Division, U. S. Public Health Service.

International Medical Congress.—On February 17 and 18 at a meeting in Laredo, Texas, the International Medical Congress was organized with Dr. Ismael Cosio Villegas, Mexico, D. F., president; Dr. Isidore S. Kahn, San Antonio, Texas, vice president; Dr. Norman Shafer, San Antonio, secretary, and Miss Pansy Nichols, Austin, executive secretary. The organization was the result of a meeting called to hold an international congress under the auspices of the Southwest Texas District Medical Society, the Texas Tuberculosis Association, the National Tuberculosis Association and the U. S. Public Health Service and the Pan American Sanitary Bureau. Local hosts were the Webb-Zapata-Jim Hogg Counties Medical Society and the Webb County Tuberculosis Association. The meeting was intended to bring together United States and Mexican physicians for discussions of medical subjects of interest to the medical profession in the border states of both countries. Among the speakers were:

Dr. Julius L. Wilson, New Orleans, What Modern Medical and Surgical Treatment Offer the Tuberculous Patient.
Dr. John G. Young, Dallas, Recent Advances in Infant Nutrition.
Dr. Alvis E. Greer, Houston, The Campaign Against Socialization of Medicine.
Dr. Percy S. Pelouze, Philadelphia, Modern Treatment of Gonorrhea.
Herman E. Hilleboe, P. A. Surg., U. S. Public Health Service, Community Control of Tuberculosis.
Dr. Miguel Jimenez, Mexico City, Collapse Therapy in the Control of Tuberculosis.

Eighty-two physicians registered at the meeting, fifty-nine of the United States and twenty-three of Mexico. It was agreed to hold a similar congress annually in Laredo.

Refrigeration Research Foundation.—An initial fund of $250,000 will be used to start the work of the Refrigeration Research Foundation, a non-profit making corporation organized under Illinois laws Oct. 14, 1943. Membership in the new foundation is composed of two groups—public members who have achieved civic distinction and sustaining members, representatives of companies who have contributed funds to the foundation. Funds will be provided by subscriptions from corporations, firms or individuals engaged in the preservation of food or other commodities by refrigeration. Research will be carried on in Canada and Mexico as well as in the United States. The objectives of the new group are:

To improve the methods of refrigeration for the better preservation of food and other commodities essential to the health and welfare of the American people.
To develop and support research in the science and art of refrigeration of food and other commodities through a nation-wide program of financial grants to established institutions and agencies of research.
To establish fellowships in institutions and agencies of research and thereby to aid in the training of competent personnel to give activation and leadership to the refrigeration of commodities essential to the national economy.
To establish in the interest of the American people a repository of scientific information relating to the refrigeration of food and other materials.
To cooperate with and aid agencies of federal and state governments, institutions of research and others in connection with their scientific and educational work involving the refrigeration of food and other products.

Officers include Roy M. Hagen, Los Angeles, president, and Helmut C. Diehl, B.S., principal chemist and chief of the commodity processing division of the Western Regional Research Laboratory of the U. S. Department of Agriculture, director of the scientific program.

LATIN AMERICA

Health Activities in Latin America.—The Cuban Ministry of Agriculture is assisting Dr. B. Vaillant Duany in his studies after his recent discovery of a bacterial mold while investigating the penicillium fungus. The name Broomeya cubensi has been given to the new mold, which is said to be characterized by a kidney shaped form of 20 to 30 cm. in circumference and having a spongelike texture. In the report released to the ministry, it is stated that from the industrial point of view this fungus might well replace marine sponges, since its absorbent powers are absolute. It texture is not disintegrated by alcohol and it embodies all other properties of sponges. The report continues that in surgery the material could be substituted for the cotton and gauze sponges and that it may be used in the treatment of certain ulcerous diseases, serving as a pressure absorber for bandages. The cultivation of the fungus is best obtained in shaded beds of silica and other soil with a 70 per cent organic content, it was stated.

Blood Banks.—The Cuban Medical Federation has established a blood plasma bank in Havana, the first in a series to be formed throughout the country. The work is being carried out with the assistance of Dr. Cornelius P. Rhoads of the Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, who recently made a trip to Cuba's medical centers under the auspices of the National Research Council.

Mother's Milk Bank.—The Infant Hygiene Department of Havana has created a mother's milk bank.

Care of Rubber Workers.—Five dispensaries have been opened in northwestern Ecuador for rubber workers, bringing to a total of seventeen the number now operating in this rubber area through the cooperation of the Ecuadorean government and the Institute of Inter-American Affairs, Washington. Each dispensary is staffed by a physician trained in tropical disease control and usually a laboratory technician. The new dispensaries are at Tena, province of Napo and Pastaza; Concepcion, province of Esmeraldas, and in Cojimines, Coaqui and Jama in the province of Manabi.

New Medical Journal.—Revista Brasileira de Medicina, a new monthly publication, made its appearance with the January issue. The first number contains sections of original articles, medical lectures, clinical notes, critical commentaries, current medical literature, medical news and books received. Dr. Olavo Rocha is the editor. The headquarters of the new journal are Editora Guanabara, rua do Ouvidodr 132, Rio de Janeiro.

FOREIGN

Personal.—Dr. Andrew Rae Gilchrist was appointed George Alexander Gibson Lecturer for 1944 for the Royal College of Physicians of Edinburgh and Dr. Norman M. Dott was appointed Morison Lecturer. Both are members of the college. ——Dr. William H. Newton, since the outbreak of war acting head of the department of physiology at University College, London, has been appointed George Holt professor of physiology in the University of Liverpool, succeeding Dr. Herbert Eldon Roaf, who is retiring at the end of March. —— Dr. George Grey Turner, professor of surgery in the University of London, has been elected to deliver the Hunterian oration for 1945 of the Royal College of Surgeons of England.

Medical Changes in Norway and Sweden.—From a personal letter comes the following information regarding medical conditions in Norway and Sweden. An eminent physician writes: "Here in Sweden the conditions are still quiet. We live very nearly as in the deepest peace with the exception that we are using all means to strengthen our defenses in the hope to keep us free from German attacks. Dr. Gunnar Holmgren, widely known as an authority on laryngeal cancer, has discontinued his service as professor and clinical chief of the otorhinolaryngologic department in the Karolinska Sjukhuset because of age. His successor is Dr. Torsten Skoog. Dr. Dohlman is professor in Lund, and Dr. Nylen is professor in Uppsala. Professor Blegvad has been ill but has made an excellent recovery. The clinic of De Kleyn in Holland is still endeavoring to conduct some scientific research in spite of the terrific circumstances that prevail. Professor Schmiegelow in Copenhagen has just celebrated his 87th birthday and is reported still able to work. In Norway scientific research in medicine seems to have been discontinued completely owing to prevailing circumstances."

Deaths in Other Countries

Dr. Alexander Primrose, professor of clinical surgery emeritus, University of Toronto Faculty of Medicine, died February 8, aged 82. Dr. Primrose, who was an honorary fellow of the American Medical Association, once served as dean of the University of Toronto.——**Dr. Heitor Annes Dias,** professor of clinical medicine in the Faculty of Medicine of Rio de Janeiro for many years, died recently.

CORRECTION

Tables of Approximate Equivalents of Doses, Apothecaries' and Metric Systems.—In THE JOURNAL, February 19, page 509, in the abbreviated conversion table, for "1 grain = 0.648 gram (Gm.)" substitute "1 grain = 0.0648 gram (Gm.)."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 5, 1944.

Sex Education

In recent years there has been a growing sense of the need for young people to be suitably introduced to and instructed in the matter of sex and of the responsibilities of schools and youth organizations in this work. This need is increased by the tendency of wartime circumstances to break down restraints. The Board of Education has therefore issued a pamphlet on sex education in schools and youth organizations. Up to the present time such instruction has not been generally undertaken by the board, which now invites the particular attention of local authorities to two practical possibilities: 1. The provision of short courses on sex education for teachers and youth leaders to open up the subject and make available the experience of colleagues who have pioneered successfully in this field and others who have had special knowledge and experience. 2. The organization of parents' meetings with a view to securing their cooperation in anything done through the schools and helping them to deal with their own children. These suggestions relate primarily to the long term aspect of sex education. But in certain areas authorities are now much exercised by the immediate problem of the increased number of young persons who fall victims to the special temptations and circumstances of wartime.

It is pointed out that knowledge of the process of human reproduction comes to every one sooner or later but that the way in which this knowledge is acquired is all important. The first approaches to the subject are probably best made not through formal instruction but by dealing sensibly with any question asked. Whatever the age and whatever the question, the answer should be given to the fullest extent that the child can understand. A substantial proportion of parents are reluctant to do this or feel the need of some guidance. Hence the need for instruction in school. During the war many young girls have become victims of indiscriminate associations, with an increasing incidence of venereal disease. It is important that they should be warned of the danger, though it is undesirable that sex instruction should be concentrated on the pathologic aspect.

Instruction in the physiology of sex should be given objectively at an early age, before emotional associations develop and if possible as part of a normal course in, for example, biology or general science. When the child is more mature the teacher will draw on his or her own experience of life, or the religious and moral sources on which he or she has relied. How the sex impulse can make or mar happiness should be shown then.

The age at which sex instruction is given varies considerably. The most common age is 13, the last year at school and the stage at which mammals and man are most often discussed in the biology course. But it is increasingly realized that there are great advantages in introducing the subject at an early age, before strong emotional associations develop. Physicians have an obvious advantage for sex instruction, as they can speak with authority. The following testimony from a girls' organization is noteworthy: "A really good woman physician, preferably married, youngish, with a modern approach and modern clothes, is the most successful. The girls trust the physician as a physician and welcome her counsel as a married woman; she looks like the sort of woman they would like to be." Appreciation from parents regarding this work has been expressed almost universally, and among its most valuable results is the possibility that these children, when they become parents, will find it easier to give this knowledge to their own children.

American Army Takes Over Military Hospital

An impressive ceremony took place recently when a famous military hospital was handed over to the medical services of the United States for the duration of the war. The locality of the hospital is not published. The hospital contains many memorials of past senior officers whose lives were spent in the medical services of the army all over the empire. When Lieut. Gen. Sir Alexander Hood, director general of the Army Medical Service, and Brig. Gen. Paul R. Hawley, chief surgeon of the U. S. forces, reached the parade ground they were received with a general salute from the troops of the two nations. After inspection of the guard of honor the party ascended the main entrance steps. Here the registrar of the hospital, who has fifty-one years of army service and is the oldest soldier serving in the army medical corps, handed the presentation key, which lay on a cushion bearing the badges of the medical services of both armies, to Sir Alexander Hood, who said "I hand over this key in the certain confidence that when in the hour of victory we receive back the hospital its traditions will have gained an added luster." The key was received by Brigadier General Hawley, who said that he accepted the charge of the hospital so generously placed at their disposal and assumed the obligation of maintaining its great traditions. He added "The final symbol of our association can be found in this hospital."

Trinidad Health Campaign: Improvements Achieved

The Colonial Office announces that $2,500,000 is to be spent on Trinidad's health program this year, which is $500,000 more than was spent last year. New specialists in the hospitals, higher salaries for nurses and a new health education officer to supervise the teaching of hygiene in the schools are among the improvements envisaged. Work on two new hospitals may be held up till after the war, but it is hoped that construction of the $1,500,000 tuberculosis sanatorium may start this year. Two new health centers have been built and the first rural dispensary is in course of construction. A child welfare center established last year is proving successful. Campaigns against disease have made gradual but steady progress. Antimalarial measures have included the clearing of swamps, and one cleared on the seashore promises to become a popular health resort.

The incidence of typhoid and dysentery has declined. A vigorous campaign against hookworm is being carried out. Two mobile hookworm units are now supplementing the work of clinics in rural areas. The medical superintendent at the Trinidad Leprosarium has been responsible for many improvements; district clinics throughout the island now deal with many early cases of leprosy, rendering transfer to the leprosarium unnecessary.

Turkish Medical Visitors

The war seems to have brought to this country many medical visitors from almost all allied and neutral nations. The latest arrivals are three leaders of the Turkish medical profession whose visit is sponsored by the Turkish Ministry of Health. They are Dr. Huseyin Avni Askel, chief surgeon to the Haskei Hospital, Istanbul; Lieut. Col. Burhanettin Tugan, professor of clinical chemistry, Gulhane Military Medical School, and member of the Military Medical Academy, and Dr. Bekir Nimetullah Taskiran, chief surgeon of the Ankara Model Hospital. They are interested in research work on nutrition, wartime surgery, methods of blood transfusion and the treatment of wounds, burns and other injuries.

BRAZIL

(From Our Regular Correspondent)

Jan. 20, 1944.

Identity of the Equine Encephalomyelitis Virus in Brazil and the United States

Up to a few months ago, little was known about the cause of equine encephalomyelitis in Brazil. For the other countries of South America Rosenbusch and Howitt proved that a virus isolated in Argentina was indistinguishable from the western strain of the United States, and Beck, Wyckoff, Kubes and Rios affirmed that a virus isolated in Venezuela was antigenically distinct from both the eastern and the western American strains. In Brazil Carneiro in 1937 isolated a virus which he supposed "very similar to that of the infectious encephalomyelitis of the United States" as far as clinical and pathologic data from inoculations in experimental animals could show. More recently, with a formaldehyde treated vaccine prepared from the same virus, Carneiro was able to protect guinea pigs inoculated intracerebrally with an homologous virus. Nevertheless, as he could not show the existence of cross immunity between the virus isolated by him and that from Argentina, the Brazilian virus continued unidentified. Owing to uncertainty in the identification of the several infectious agents isolated from cases of equine encephalomyelitis in Brazil, it is interesting to record the fact that Drs. Edwin H. Lennette and John P. Fox of the Service of Studies and Researches on Yellow Fever, maintained in cooperation by the International Health Board of the Rockefeller Foundation and the Brazilian Ministry of Health, have been able in the Rio de Janeiro laboratory to find horses and mules with antibodies neutralizing the eastern strain of the equine encephalomyelitis virus of the United States.

Not long ago an epizootic of encephalomyelitis occurred in the county of Pessanha, located in the east central part of the state of Minas Geraes. Samples of serum were collected from 18 horses and mules which had passed through the epizootic. These serums were first tested for neutralizing antibodies to the St. Louis encephalitis, a sample furnished by Dr. M. G. Smith of Washington University, St. Louis, being used, and then for neutralizing the eastern and western strains of the equine encephalomyelitis virus, through the use of samples furnished by Dr. P. K. Olitsky of the Rockefeller Institute, New York. None of the serums contained demonstrable antibodies to the St. Louis or the western equine encephalomyelitis viruses. Fourteen of the 18 serums, however, possessed antibodies to the eastern strain. Only one of the 20 control serums obtained from adjacent areas was found to contain antibodies to the eastern strain of the virus, and this one also came from the county of Pessanha. The conclusion of this study is that the eastern strain of the equine encephalomyelitis virus occurs also in Brazil and is not confined to North America.

A New Ponderal Test for Detection of the Activity of Adrenal Cortex Extract

Unilateral adrenalectomy causes apparent hypertrophy of the remaining gland, as shown by the MacKays. In normal animals adrenal extract induces atrophy of the adrenal glands, a phenomenon demonstrated by Ingle and Kendall. The growth stimulus seems to be dependent on the adrenotropic hormone of the hypophysis. The MacKays demonstrated that active cortical extracts are able to prevent the pituitary stimulus in adrenalectomized rats. Based on these findings, Dr. Gilberto G. Villela of the Oswaldo Cruz Institute of Rio de Janeiro devised a new biologic test: The weight of the remaining adrenal glands of the rats is taken as a criterion for the activity of the cortical extracts injected. Rats weighing from 20 to 60 Gm. were employed. Adrenalectomy was performed unilaterally, and the extract was injected from the same day until the eighth day after operation. At this time the second gland was removed, dried and weighed. For each test three groups of rats were used, the first group having been injected with the unknown extract, the second with 0.5 mg. of 11-desoxycorticosterone, and the third not injected. The weight of the adrenals of the rats of the third group showed definite hypertrophy compared with the other groups. The weight and size of the glands of normal rats of the same age showed values comparable to those of the rats which were operated on and injected with active extracts or 11-desoxycorticosterone. When younger rats weighing from 20 to 30 Gm. were used the differences were not as evident as when older animals, weighing from 50 to 60 Gm., were employed. The quantity of the hormone necessary to maintain the weight of the gland of the adrenalectomized rat at the same level as the weight of the gland of the rat which is not operated on is proposed as "1 antihypertrophic rat unit."

Brief Items

Dr. Alfredo da Matta of Manaos, state of Amazonas, has just completed fifty years in the practice of medicine. As a physician and as a citizen Dr. da Matta has an exceptional record, and for this reason the Medical Society of Manaos, the government and his many friends have held several demonstrations in his honor.

The Brazilian Academy of Medicine of Rio de Janeiro rewarded the monograph of Drs. Cicero Monteiro and Candido de Oliveira on "Tumors of the Neck" with the prize "Hilario de Gouveia." Dr. Aloysio de Castro, professor emeritus of medicine of the University of Rio de Janeiro and president of the academy, presented a special medal to the authors.

In a farm near Agua Claras, state of Bahia, a "preventorium" for 100 healthy children of leprous parents has been recently inaugurated. This is the sixteenth such establishment founded by the federal government in the last few years. There are about 30,000 persons with leprosy in Brazil, many of them isolated in fifteen leprosariums built since 1935, when the federal government began to put into practice a large plan to control the disease.

Marriages

JOHN GARNETT RAMSBOTTOM, Jamaica, N. Y., to Miss Harriet Louise Strayhorn of Durham, N. C., in Cheraw, S. C., December 30.

ROBERT HOWELL WITMER, Lancaster, Pa., to Miss Audrey Elizabeth Bickley of Bala-Cynwyd, December 27.

PAUL ALOYSIUS KEENEY, Harrisburg, Pa., to Miss Ann Fitz Gerald of Flushing, N. Y., December 17.

WILLIAM WALTER LEMAN, Philadelphia, to Miss Ruth Cordelia Staley of Haverford, Pa., December 18.

LYNDON CLAY SUTHERLAND, Springfield, Ohio, to Miss Ruth Anne Vogel of Waukegan, Ill., February 5.

JULIAN EDMOND JR., Modesto, Calif., to Miss Elizabeth Bonine of Lodi at Stockton in January.

ROBERT EDWIN SHIFLET, Augusta, Ga., to Miss Helen Marie Crisp in Seneca, S. C., December 29.

OTHO B. ROSS JR., Charlotte, N. C., to Miss Dorothy Maude Lowe of Miami, Fla., December 22.

EDWARD D. CROISSANT, Belmont, Mass., to Miss Frances Sisk of Houston, Texas, January 28.

WARREN H. ORR, Seattle, to Miss Opal MacCullock of Providence, R. I., January 1.

EDGAR ANGEL to Miss Maybelle Bryant, both of Franklin, N. C., January 18.

DAVID GALLOWAY to Miss Alice Neil, both of Memphis, Tenn., January 5.

S. MARX WHITE to Mrs. Jewell Fuller, both of Minneapolis, January 22.

Deaths

Charles Walts Burr ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1886; professor of mental diseases at his alma mater from 1901 to 1931 and since the latter date professor emeritus; emeritus professor of neurology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; president of the American Neurological Association in 1908 and the Philadelphia Psychiatric Society in 1909 and 1910; past president of the Philadelphia Neurological Society and the Pathological Society of Philadelphia; member of the American Psychiatric Association; fellow of the American College of Physicians; neurologist from 1896 to 1931 and psychiatrist at the Philadelphia General Hospital from 1931 to 1940; for many years on the staff of the Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases; delivered the S. Weir Mitchell Oration before the College of Physicians of Philadelphia Nov. 19, 1919; honorary librarian, College of Physicians of Philadelphia; in 1935 received the twelfth annual Strittmatter Award of the Philadelphia County Medical Society; died February 19, aged 82, of carcinoma of the pancreas.

Myron Firth Metzenbaum ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1900; specialist certified by the American Board of Otolaryngology; a member of the founders group of the American Board of Plastic Surgery; member of the American Academy of Ophthalmology and Otolaryngology, Cleveland Otolaryngological Club, Academy of Medicine of Cleveland and the European Congress of Reconstructive Surgery; fellow of the American College of Surgeons; awarded medal by the United States government for research in radium, St. Louis Exposition in 1904; established Cleveland's present ambulance system under police department in 1909, which was adopted throughout the country; developed and introduced the method of administering ether-air or drop ether anesthesia in 1900; described a new method of replacement of the lower end of the dislocated septal cartilage in 1929; at one time lecturer at the Western Reserve University School of Medicine; served on the staffs of the Huron Road Hospital, East Cleveland, Mount Sinai and St. Luke's hospitals; died January 25, aged 67, of angina pectoris.

James Lung Bevans ✠ Colonel, U. S. Army, retired, Washington, D. C.; Northwestern University Medical School, Chicago, 1893; fellow of the American College of Surgeons; entered the medical corps of the U. S. Army as an assistant surgeon on Dec. 6, 1901; rose through the various grades to that of lieutenant colonel on May 15, 1917; retired Aug. 21, 1922 for disability in line of duty; promoted to colonel on June 21, 1930 under a special act; veteran of the Spanish-American War; chief surgeon of the Third Army Corps in France during World War I and later assistant commandant of the medical department, Field Service School, Carlisle, Pa.; held the Distinguished Service Medal and the Croix de Guerre with Palm; in 1920 received the Henry S. Wellcome Medal for the best essay on medicomilitary subject; served as the first director and medical superintendent of the John D. Archbold Memorial Hospital, Thomasville, Ga.; died in the Walter Reed General Hospital February 5, aged 74, of congestive heart disease.

Hugh Alvin Cowing ✠ Muncie, Ind.; Miami Medical College, Cincinnati, 1890; past president and vice president of the Indiana State Board of Health; for many years secretary of the Delaware County Board of Health; president of the city board of health; served as city and county health officer; past president and secretary of the Delaware County Medical Society; one of the organizers, served as director, vice president and president of the Y. M. C. A.; a member of the Indiana State Committee of the International Congress on Tuberculosis in 1908; for many years president of the Delaware County Children's Home Association; formerly vice president of the Muncie Federal Savings and Loan Association; member of the Selective Service Board, 1917-1918, and the Volunteer Medical Service Corps in 1918; author of "A Meandering Hoosier" in 1937; member of the staff and vice president of staff 1932-1933, Ball Memorial Hospital, where he died February 9, aged 83, of carcinoma of the prostate with metastasis.

George Washington Post ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; president of the Illinois State Medical Society; president of the Chicago Medical Society, 1937-1938; fellow of the American College of Surgeons; formerly assistant in surgery at his alma mater, now known as the University of Illinois College of Medicine, instructor in clinical surgery, associate in surgery, assistant professor of surgery, and since Sept. 1, 1930 associate professor of surgery; member of the founders group of the American Board of Surgery; formerly consulting surgeon, Chicago State Hospital; attending surgeon, West Suburban Hospital, Oak Park, Ill.; at one time attending surgeon, St. Anne's Hospital; died, March 2, aged 59, of coronary occlusion.

Caleb Anderson Ritter ✠ Kansas City, Mo.; Indiana Medical College, Indianapolis, 1877; an Affiliate Fellow of the American Medical Association; member of the Central Association of Obstetricians and Gynecologists; past president of the Kansas City Academy of Medicine; fellow of the American College of Surgeons; formerly a trustee, treasurer and professor of obstetrics at the University Medical College; at one time city physician and police surgeon in Indianapolis; served on the staffs of the Florence Crittenton and St. Vincent's maternity homes, the University Hospital, Kansas City General Hospital, Research Hospital, Christian Hospital, Willows Maternity Sanitarium and the Trinity Lutheran Hospital, where he died January 31, aged 92, of bronchopneumonia.

Harry S. Berman ✠ Detroit; College of Physicians and Surgeons, Baltimore, 1914; specialist certified by the American Board of Pediatrics, Inc.; a captain in the medical corps of the U. S. Army during World War I, served on former President Hoover's food commission and aided in the rehabilitation of Czechoslovakia; secretary-trearurer of the Wayne County Medical Milk Committee; member of the Association of Military Surgeons of the United States and American Public Health Association; member of the child welfare division of the American Relief Administration; on the staff of St. Mary's Hospital; member of the selective service examining board and on the staff of Harper Hospital, where he died February 16, aged 54.

Philip Davie Kerrison, New York; Medical College of the State of South Carolina, Charleston, 1896; New York University Medical College, 1898; specialist certified by the American Board of Otolaryngology; member of the American Laryngological, Rhinological and Otological Society and the American Otological Society, Inc.; fellow of the American College of Surgeons; formerly clinical lecturer on diseases of the ear at the University of Bellevue Hospital Medical College; served as professor of otology at the New York Polyclinic Medical School; for many years on the staffs of the Willard Parker and Manhattan Eye, Ear and Throat hospitals; author of "Diseases of the Ear"; died January 24, aged 82, of heart disease.

William Wallace Roblee ✠ Riverside, Calif.; Cooper Medical College, San Francisco, 1895; past president of the California Medical Association and the Riverside County Medical Society; member of the House of Delegates of the American Medical Association in 1937; veteran of the Spanish-American War and World War I; served as physical director and director of the local Y. M. C. A. and president of the association for many years; formerly associated with the Indian Service; on the staffs of the Sherman Institute Hospital and the Riverside Community Hospital, where he died January 24, aged 71.

Major Henry Worthington ✠ Chicago; Northwestern University Medical School, Chicago, 1901; since 1930 medical superintendent of the Research and Educational Hospitals, University of Illinois; served as assistant eye surgeon at the Illinois Charitable Eye and Ear Infirmary, assistant in ear, nose and throat department, Chicago Eye, Ear, Nose and Throat Hospital and Rush Medical College Dispensary, and assistant in eye department, Children's Memorial Hospital; at one time secretary of the Chicago Ophthalmological Society; died February 27, aged 64, of coronary thrombosis.

Edwin F. Arnold, Bellefontaine, Miss.; Memphis (Tenn.) Hospital Medical College, 1891; member of the Mississippi State Medical Association; for many years chairman of the Webster County Democratic Executive Committee; trustee of the Eupora special consolidated school district and director of the Bank of Eupora; died January 7, aged 73, of cerebral hemorrhage.

Paul Bradford Badger Jr., Greenwich, Conn.; Columbia University College of Physicians and Surgeons, New York, 1943; died December 12, aged 26, of an overdose of sedative, self administered.

Cheney Hosmer Calkins, Springfield, Mass.; University of Pennsylvania Department of Medicine, Philadelphia, 1882; member of the New England Ophthalmological Society; died January 19, aged 83, of cerebral thrombosis due to generalized arteriosclerosis.

Jay Randolph Crawley ✠ Anjean, W. Va.; Ohio State University College of Medicine, Columbus, 1917; served during World War I; died in a hospital at Charleston February 2, aged 52, of heart disease.

William Moody Cunningham ⊕ Jasper, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1884; member of the House of Delegates of the American Medical Association, 1926-1927; past president of the Medical Association of the State of Alabama, the Walker County Medical Society and the Southern Railway Surgeons Association; a founder of the Corona Hospital, Corona; served on the staffs of the Peoples and Walker County hospitals; died in Birmingham January 18, aged 85, of heart disease.

John O. Dyrnes ⊕ Manasoa, Benenitra, Madagascar, Africa; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1897; Associate Fellow of the American Medical Association; a medical missionary under the auspices of the American Lutheran Free Church Mission; died December 7, aged 76, of diabetes mellitus.

Orville Reed Hagen, Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1905; member of the Medical Society of New Jersey; a director and past president of the Passaic County Tuberculosis and Health League; served as a major in the medical corps of the U. S. Army and with the American Expeditionary Forces in France during World War I; formerly city health officer; on the staffs of the Valley View Sanatorium and the Paterson General Hospital; died January 23, aged 64, of coronary occlusion.

Virgil Hammer, Luray, Va.; Medical College of Virginia, Richmond, 1901; served as coroner and health officer of Page County for many years; died January 18, aged 66, of organic heart disease and coronary thrombosis.

Joel Walter Hood, Ocala, Fla.; Hospital College of Medicine, Louisville, Ky., 1884; honorary member of the Florida Medical Association; served for a short time during World War I; died recently, aged 92.

Theodore James Kasinski, Lorain, Ohio; Ohio State University College of Medicine, Columbus, 1916; served during World War I; died in the Veterans Administration Facility, Chillicothe, January 12, aged 54, of arteriosclerotic heart disease.

Elizabeth Kendig, Lancaster, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1886; died January 9, aged 89, of chronic myocarditis.

Hermann Loeb, Bridgton, Maine; Julius-Maximilians-Universität Medizinische Fakultät, Würzburg, Bavaria, Germany, 1906; died January 27, aged 62, of cerebral hemorrhage.

William Edward MacCoy, Glendale, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1904; died January 6, aged 68, of coronary disease.

Howard Peter Mickley, Neffs, Pa.; Jefferson Medical College of Philadelphia, 1889; died in the Allentown Hospital, Allentown, January 8, aged 77, of diabetes mellitus.

Harry Miller, Morristown, Ind.; Medical College of Indiana, Indianapolis, 1891; for many years served on the staffs of the National Home for Disabled Volunteer Soldiers at Marion, and Danville, Ill.; died January 2, aged 76, of cerebral hemorrhage.

William Francis Monaghan, Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; formerly on the staff of the Misericordia Hospital, where he died January 10, aged 70, of lung abscess and myocarditis.

James Joseph Moran ⊕ Spring Valley, Ill.; Northwestern University Medical School, Chicago, 1905; past president of the Bureau County Medical Society; past president of the Hall township high school board; senior surgeon, St. Margaret's Hospital, where he died January 20, aged 67, of splenic anemia (familial type).

James Munsie, Cleveland Heights, Ohio; Niagara University Medical Department, Buffalo, 1898; served on the staff of the Hospital Clinic, now the Polyclinic Hospital, in Cleveland; died in the Woman's Hospital, Cleveland, January 18, aged 76, of leukemia and pneumonia.

Jay Odell Nelson, Howard City, Mich.; College of Physicians and Surgeons, New York, 1890; served as president of the school board and health officer; died January 13, aged 80, of pneumonia.

John Nugent, Southampton, N. Y.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1881; served as coroner of Suffolk County and for many years health officer of Southampton; a founder of the First National Bank of Southampton and for many years president; on the staff of the Southampton Hospital; died January 18, aged 85, of cerebral hemorrhage.

Louis Ely Papurt ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1924; specialist certified by the American Board of Orthopaedic Surgery, Inc.; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; served on the staffs of the Lutheran Hospital, St. John's Hospital, Fairview Hospital, Deaconess Hospital, St. Luke's Hospital and the Mount Sinai Hospital, where he died February 17, aged 43, of rheumatic heart disease.

Mary Almera Parsons, Washington, D. C.; Howard University College of Medicine, Washington, 1874; member of the Medical Society of the District of Columbia; died in St. Elizabeth Hospital January 12, aged 93, of coronary occlusion and arteriosclerosis.

John Green Pittman, Gaffney, S. C.; Columbia University College of Physicians and Surgeons, New York, 1900; member of the South Carolina Medical Association; formerly secretary of the Cherokee County Medical Society; served as president of the board of health; on the staff of the Cherokee County Hospital, where he died January 7, aged 68, of coronary thrombosis.

Elgen Clayton Pratt ⊕ Lieutenant Colonel, U. S. Army, retired, Plymouth, Wis.; Milwaukee Medical College, 1908; U. S. Army Medical School, 1923; entered the medical corps of the U. S. Army on July 1, 1920; promoted as a major on Sept. 4, 1930 and later as a lieutenant colonel; retired Sept. 30, 1938; served during World War I; died December 29, aged 59, of coronary embolus.

Thomas Edward Presley, Clovis, N. M.; Memphis (Tenn.) Hospital Medical College, 1896; at one time vice president of the New Mexico Medical Society; served during World War I; on the staff of the Clovis Memorial Hospital; died in St. Mary's Hospital, Roswell, January 6, aged 73, of carcinoma.

Raymond Brock Ramage, Jacksonville, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1914; member of the Florida Medical Association; died December 22, aged 53, of coronary thrombosis and arteriosclerosis.

Irving Whitmore Robbins, Vacaville, Calif.; Cooper Medical College, San Francisco, 1908; at one time served in the U. S. Navy; died December 19, aged 60, of myocarditis.

Carl Francis Schaub ⊕ Chicago; Loyola University School of Medicine, Chicago, 1929; associate professor and chairman of the department of ophthalmology at his alma mater; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; senior ophthalmologist, on the staff of Mercy Hospital; died in the Columbus Hospital January 7, aged 41, of coronary disease.

Edwin B. Tuteur ⊕ Los Angeles; Jefferson Medical College of Philadelphia, 1890; died December 26, aged 74, of osteomyelitis of the jaw and the shoulder.

DIED WHILE IN MILITARY SERVICE

John Neal Carnes, Gallipolis, Ohio; Ohio State University College of Medicine, Columbus, 1940; commissioned a first lieutenant in the medical reserve corps of the U. S. Army on May 10, 1941; later promoted as a captain; flight surgeon; killed in the Central Pacific area in an airplane accident December 10, aged 29.

Clayton Calvin Egan Carson, Gassaway, W. Va.; Jefferson Medical College of Philadelphia, 1925; member of the West Virginia State Medical Association; served as vice president, secretary and treasurer of the Central West Virginia Medical Society; commissioned a captain in the medical corps, Army of the United States, on Nov. 11, 1942 and extended active duty began Nov. 25, 1942 at Fort Jackson, S. C.; recently assigned to the 274th Quartermaster Service Battalion; died at Camp Butner, N .C., in an automobile accident February 14, aged 43.

William Val Sanford ⊕ Ripley, Tenn.; Vanderbilt University School of Medicine, Nashville, 1918; formerly associate health officer of Rutherford County and a member of the central office staff of the state department of public health, where he had been director of the field technical service for many years; served during World War I; commissioned a major in the medical corps, Army of the United States on July 31, 1942; extended active duty began Aug. 15, 1942 at Station Hospital number 1, Fort Bragg, N. C.; died in the North African area December 5, aged 49, of coronary occlusion.

Correspondence

"GROWTH ACCELERATING PROTEIN"

To the Editor:—A communication published recently in these columns by J. L. Gabby (THE JOURNAL, Nov. 6, 1943, p. 655) raises certain points which lead to confusion in the interpretation of published data. The comments by Gabby are occasioned by the fact that an editorial in THE JOURNAL, May 22, 1943, page 232, in reviewing a preliminary paper by White and Sayers (*Proc. Soc. Exper. Biol. & Med.* **51**:270 [Nov.] 1942) on the rat growth accelerating effect of nitrogen furnished by pancreas protein also commented on results obtained by White and Sayers with "soy bean protein." From the published data the editorial writer drew correct conclusions regarding the nutritional inferiority of the soy bean protein studied but described this in terms of "soy bean dwarfism." This was a rather sweeping generalization, as White and Sayers fed not the whole soy bean meal but an isolated protein constituent of the soy bean.

Gabby's remarks create the erroneous impression that the statements in the editorial were also made in the published work by White and Sayers. On the contrary, we did not refer at all to our data with the soy bean protein, since the chief object of our investigation was to report the striking results obtained with pancreas protein nitrogen. Moreover, the preliminary results with the soy bean protein were obtained with only four animals, although since publication this number has been doubled, with confirmation of the published findings.

The protein used by White and Sayers was prepared in the classic manner often employed to prepare glycinin, one of the alkali soluble proteins of the soy bean. This protein has long been known to be nutritionally inadequate and is not, as Gabby claims, a "newcomer in the field of protein nutrition." The growth data are for the particular preparation described by White and Sayers and not for soy bean flour or for any of the other proteins of the soy bean. This does not preclude the possibility that the nutritional deficiencies in one of the proteins of the soy bean may be met by other proteins in soy flour.

Gabby also objects to the heat treatment to which the soy bean protein had been subjected. He states that he has evidence from the literature that heat in an electric oven has no appreciable effect on the nutritive quality of soy bean protein, and therefore the heat treatment used by White and Sayers did not tend to increase its nutritive value. This point by Gabby is irrelevant to his discussion, since it is clear that heat does not decrease the nutritive value. The data of Wilgers, Norris and Henser (*Indust. & Engin. Chem.* **28**:586 [May] 1936), clearly showing the higher nutritive value of "toasted" as compared to unheated soy bean protein, are ignored by Gabby. These authors obtained their material from Hayward, who used similar soy bean products in work reported in a publication by Hayward, Steenbock and Bohstedt (*J. Nutrition* **11**:219 [March] 1936). Gabby prefers to refer to a single table in the thorough study by Hayward, Steenbock and Bohstedt. This table presents evidence that heat in an electric oven had no appreciable effect on the nutritive value of soy bean protein. It should be noted that heat is not claimed to decrease the nutritive value. Gabby does not mention other conclusions of Hayward, Steenbock and Bohstedt on pages 231, 232 and 233 of their article, which also bear on Gabby's claim that "the literature of science has many references to the high nutritive value of soy protein."

To quote from Hayward, Steenbock and Bohstedt: "Raw soy beans were found to contain protein of low nutritive value as determined by the grams of growth per gram of protein eaten . . . commercial soy bean oil meals which had been prepared at medium and high temperatures . . . contained proteins which had about twice the nutritive value of the raw soy beans or low temperature meals. . . . The food intake of all rats which received either the raw or heated soy bean diets ad libitum was found to be similar for the first few days of the feeding period. This suggested that the poor growth resulting from the raw soy beans and low temperature meals was due to some deficiency in these constituents rather than to a lack of palatability. When casein was incorporated in the diet which contained raw soy beans, normal growth resulted. These results suggested that the deficiency in the soy bean existed in the protein fraction."

It may be added that other work on the nutritive value of soy bean protein and the nature of the difference between raw and heated soy bean protein has been thoroughly examined and reviewed by Hayward and Hafner (*Poultry Science* **20**:139 [March] 1941). These investigators have established the nutritional inferiority of raw soy beans and the increase in the nutritional value which is produced by heat treatment. Almquist, Mecchi, Kratzer and Grau (*J. Nutrition* **24**:385 [Oct.] 1942) have recently presented further evidence that raw soy bean protein, used as the sole source of protein for chick diets, has a growth limiting deficiency in methionine. Also recent analyses by Block and Bolling (*Arch. Biochem.* **3**:217 [Dec.] 1943) show that defatted soy bean meal contains less leucine, an essential amino acid, per gram of nitrogen than any one of thirteen animal and eight plant sources of protein which were examined, with the exception of gelatin.

Gabby presents growth data obtained in his laboratory claiming to show that an edible product, soy flour, is almost the same in nutritive value as the protein of spray dried skimmed milk powder. A comparison is reported between casein and soy flour, with the protein level of the diets given as 20 per cent. While the two groups of animals grew equally well, the growth rate of control animals on the casein diet is surprisingly poor. Moreover, it is possible that a supplementary protein effect to the soy flour was obtained from the yeast used by Gabby as a source of the vitamin B complex. The nutritive improvement of soy bean protein by other proteins is well known and has been pointed out in the work of Hayward, Steenbock and Bohstedt.

Soy flour may be nutritionally adequate, since it contains a mixture of proteins. It is also apparent that the nutritional value may be further enhanced by other sources of protein supplements. However, data on soy flour have no relationship to the data of White and Sayers, who fed a protein isolated from a soy bean product and not a naturally occurring mixture of proteins.

It is not our primary purpose in this communication to engage in a controversy regarding the nutritive value of soy bean products or soy bean proteins. This can be established by the published results of capable investigators. It is our desire to point out incorrect statements made by Gabby, leading to erroneous conclusions and unwarranted impressions regarding the validity of our experimental observations. The sole object of the publication by White and Sayers was to report the striking growth rate observed in rats on a diet containing pancreas nitrogen. No conclusions were drawn regarding the nutritional qualities of the soy bean protein used, and no statements were made concerning the dietary value of soy bean products. This discussion, in which it has been necessary to participate, is a result of inferences which Gabby has chosen to make and for which no basis can be found in our paper.

ABRAHAM WHITE, PH.D.,
MARION A. SAYERS, M.A.
Department of Physiological Chemistry,
Yale University,
New Haven, Conn.

MEDICAL REPORTS FOR CHILDREN SENT TO ARIZONA

To the Editor:—Will you please call attention to the fact that children sent to Tucson, Ariz., for their health should have medical reports sent with them. A large percentage of the children who are sent here by doctors in the Middle West and in the East come to us without any medical record or medical report from their family doctors.

Every year several hundred children come to Tucson for their health and attend school here from a few months to an entire school year. These children have, or have had, asthma, rheumatic fever, sinus infections or some respiratory disease of one kind or another. If the doctors who send these children to Tucson could send a medical report to the school it would help us immeasurably in planning their courses, guarding against possible injuries to their health and helping them toward complete recovery.

We often find boys and girls taking an active part in physical education programs when they should not be allowed to participate at all or should have restricted play, and some take on more school activities than they should carry.

It is sometimes two or three weeks before these children are examined, and even when a physical check-up has been made it is quite possible that some more or less serious disorder may have been missed.

ROBERT D. MORROW, Tucson, Ariz.
Superintendent of Schools.

POSSIBLE ENDOGENOUS-ALLERGIC MECHANISM OF HORMONAL ARTHRITIS

To the Editor:—I have read with the greatest interest the paper of Dr. Selye and others on the hormonal production of arthritis in THE JOURNAL, January 22, page 201. The very fact that they were able to produce a polyarthritis accompanied by Aschoff bodies in the heart, periarteritis nodosa and eosinophil granulomas by overdosage of desoxycorticosterone suggests the possibility of an allergic reaction.

Since these manifestations are called forth in response to repeated injections of a hormone, an endogenous-allergic mechanism may be operating. The concept of endogenous allergy is more fully described in my textbook on allergy.

Both the Aschoff bodies and periarteritis nodosa are considered today as expression of an allergic state (Rich, A. R.: *Bull. Johns Hopkins Hosp.* **71**:123 [Sept.] 1942), as well as eosinophil granulomas.

The idea that arthritis may be an allergic reaction to hormones is not new, particularly in arthropathies that occur in the menopause. In addition, numerous reports testify that individuals have been proved to be sensitive to endocrine products, including adrenal cortex extract. Joël (C. A.: *Schweiz. med. Wchnschr.* **71**:1011 [Aug. 30] 1941) was even able to produce antihormones to adrenal cortex extract to such a degree that fastness to this hormone resulted.

Klinge (Der Rheumatismus, Berlin, Springer, 1933) and Brunn (Experimental Investigations in Serum Allergy with Reference to the Etiology of Rheumatic Joint Diseases, London, Oxford, 1940) have shown that sufficiently sensitized rabbits will react not only to specific but also to nonspecific factors such as cold with allergic manifestations of the joints, as did the animals of Selye.

On the basis of these few considerations it has occurred to me that the pathologic lesions following overdosage with desoxycorticosterone may be the clinical expression of an allergy to the hormone of the adrenal cortex. While I am aware that the proof for this assumption is rather difficult to furnish, it might be ascertained by the following experimental tests:

1. The Schultz-Dale test on arthritic rat's uterus, desoxycorticosterone being used as the antigen.
2. Determination of the antihormone titer in the blood of arthritic and of normal rats.
3. Determination of eosinophil leukocytes in the blood.

It might even be possible that the rat's skin is able to react to a cutaneous test with the cortical hormone.

It would be of the utmost importance not alone for theory but also for the treatment of arthritic persons if it would be possible to establish the allergic mechanism of hormonal arthritides.

ERICH URBACH, M.D., Philadelphia.

VISUAL TESTS FOR MALINGERING

To the Editor:—In a communication published in THE JOURNAL January 29 under the heading Visual Test for Malingering, Dr. J. A. C. Gabriels suggests that a man who claims inability to read Snellen type subtending 17½ minutes of arc from a distance of 20 feet (visual acuity 20/70) but who can read characters subtending 10 minutes of arc at 10 feet (visual acuity 10/20) must be malingering.

Any myope knows better than this. Many of us can read type subtending less than 5 minutes at a distance of 14 inches and can see letters subtending 5 minutes from a distance of 5 feet (visual acuity 5/5) yet cannot read type subtending 20 minutes from a distance of 20 feet (visual acuity less than 20/80).

Dr. Gabriels forgets that objects lying closer to the eye than the so-called far point may be brought to a sharp focus, but as one goes beyond the far point the image rapidly becomes blurred. One way of defining myopia is to say that the far point lies at a finite distance instead of at infinity as in the emmetropic eye. Hence tests of acuity made at a given distance are not comparable with tests at another distance, and the use of conversion formulas to transpose results obtained in one way to another notation is fallacious.

RODNEY R. BEARD, M.D., San Francisco.

M.D.—NOT DR.

To the Editor:—The physicians of this country, in connection with the preparation of many millions of forms required by various government activities, frequently neglect to have their degrees following their signatures and at times prefix their names with the word "Dr.," providing no other evidence that they are doctors of medicine.

This occasionally works a hardship on us bureaucrats because, in order to assure proper distribution of certain types of materials, supplies, equipment and services, we must determine that the applicant is a physician rather than a doctor of science, of divinity, philosophy, naturopathy, chiropractic, podiatry, chiropody or whatever.

It will be appreciated if THE JOURNAL at some time might contain an editorial relative to this situation and the need for a doctor of medicine to identify himself as such when his having that degree is a prime factor in determining his eligibility under certain policies.

D. H. McCARTER,
2147 O Street N.W.,
Washington 7, D. C.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, March 4, page 668.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I-II.* Various centers, May 1-3. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral. Part II.* Chicago, June 12-16. Final date for filing application is March 12. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOGY: *Written.* Various large cities, May 8. *Oral.* Chicago, June 9-10. Final date for filing application is April 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, March 30-31. Final date for filing application is March 20. *Written.* Various centers Oct. 16. Candidates in military service may take examination at their place of duty. Final date for filing application is August 15. Asst. Sec., Dr. W. A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OBSTETRICS & GYNECOLOGY. *Oral. Part II.* Pittsburgh, June 7-13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Oct. 5-7. Sec., Dr. S. Judd Beach, P. O. Box 1940, Portland, Me.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written. Part I.* Chicago, New Orleans, New York and San Francisco, October. Final date for filing application is August 1. Sec., Dr. G. A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* New York City, June 1-4. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Chicago, June 7-8. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Oral.* New York, March 25-26, and San Francisco, May 6-7. Sec., Dr. C. A. Aldrich, 115½ First Ave. S.W., Rochester, Minn.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Treatment of Protruding Hemorrhoids by Injections of Phenol Solution.—The plaintiff had been "troubled" with hemorrhoids for about eighteen years and sought treatment in November 1940 from a corporation practicing medicine. She was attended by Dr. Harold Coe, who was an employee of the corporation and also was its secretary. Apparently a solution of phenol was injected about three or four times a week for four months into the mucous membrane under the hemorrhoids to retract the blood vessels in the tissues. In April 1941 the physician removed protruding hemorrhoids which had not been shrunk by the injections. Thereafter the patient called at the defendants' office at infrequent intervals for treatment until June 17, 1941, when she was discharged as cured. At that time no hemorrhoids were protruding and the patient "felt fairly good, though some soreness was still present." On Aug. 7, 1941 she experienced excruciating pains in the rectum and discovered a large swelling in that area and a protrusion therefrom of about a half or three quarters of an inch. She was taken to Coe's office, where, according to the patient, he gave her three injections "the same that [she] had before" and some tablets to take at home. The next day, Friday, her condition was much worse and she went to Coe's office and was given two more injections. Coe told her that she had an abscess and when it came to a head he would open it and "everything would be all right." He assured her that it "positively was not necessary" for her to go to a hospital. The next day, Saturday, her condition was worse. She was too ill to go to the physician's office and Gowans, another physician employee of the corporation, called on her, giving her an injection in the arm, which somewhat relieved her pain for the time being, and leaving her a small tube of salve with instructions as to its use. As he directed she sat in hot water three times that day for periods of fifteen to twenty minutes at a time. However, she obtained no relief and the pain continued to become worse. About 5:30 or 6 o'clock that evening she lost consciousness. The next morning her condition was very bad. She was in a semiconscious condition and was screaming with pain. Gowans again called and gave her another hypodermic. He insisted that she be not taken to a hospital. After Gowans had left, the patient's husband called in Dr. Mastin, who found a gangrenous hemorrhoid about the size of a thumb extending from the rectum and had her removed immediately to a hospital. He could not operate then because of her condition. He gave her injections of glucose. The semicoma condition he attributed to absorption of the toxins from the condition around the rectum. The condition in which he found the patient, this physician testified in the subsequent suit instituted against the corporation and Coe, in his opinion, could not successfully be treated by the application of salve or by having the patient sit in hot water, and the course he pursued was the only proper course of treatment. Further, this physician testified that while the injection method of treating hemorrhoids is a recognized form of treating internal hemorrhoids it is not a recognized method—in fact, it is a dangerous one—for treating protruding hemorrhoids. The next morning, Monday, Mastin excised the gangrenous hemorrhoid. The gangrenous area extended upward from the base of the hemorrhoid for 3½ inches and extended posteriorly into the region of the vagina and buttocks. There was a similar, though not so large, area on the opposite side of the rectum. The patient was discharged from the hospital about two weeks later. Subsequently she sued the defendant corporation, the president of the corporation and Dr. Coe for malpractice, claiming that the infection and gangrene that developed in her from August 7 onward was due to the negligence of the defendants. At the conclusion of the evidence the defendants asked for instructions in the nature of a demurrer to the evidence and, from a refusal of the court so to instruct the jury and from a judgment in favor of the patient, the defendants appealed to the St. Louis court of appeals, Missouri.

The contention of the defendants was, in effect, that the evidence adduced before the trial court did not support a judgment in favor of the patient, and the jury should not have been permitted to pass on the questions of fact involved. In our opinion, said the appellate court, under the facts and circumstances stated above, the patient clearly made a case for the jury. From the evidence the jury could reasonably have found that on Aug. 7, 1941 the patient was suffering from a protruding hemorrhoid and that the defendants, in treating her for this condition, used the injection method, which, according to Dr. Mastin, was not a proper method for protruding hemorrhoids. The jury could also have reasonably found that because of the improper method of treatment gangrene did develop and that the patient sustained an injury and suffering that she would not have experienced had the defendants administered proper treatment.

The defendants next complained that the trial court erred in permitting the patient, over their objection, to offer evidence with respect to the treatment she had received at the defendants' office from November 1940 to June 17, 1941. There is no merit to this contention, said the appellate court. It was necessary for the patient to offer this evidence to secure a complete picture of the subject matter of the litigation. The evidence contained no suggestion that the treatment received during that period was improper, and the patient made no attempt to recover damages for anything that occurred during that time. In fact, the patient herself testified that the treatment she received up to Aug. 7, 1941 was "all right" and she further testified that so far as she knew she was cured on June 17, 1941. The court specifically charged the jury that the patient did not charge the defendants with any negligence prior to Aug. 7, 1941 and that the jury should not consider matters occurring before that date except so far as they may be explanatory of matters occurring on and after Aug. 7, 1941. In view of the claim made by the patient, the character of the evidence offered and the court's instruction, we do not see how any jury of sensible men could have been misled into allowing damages for anything that occurred previous to Aug. 7, 1941. Nor, continued the court, are we impressed with another contention of the defendants that the instruction just referred to was confusing and therefore

erroneous because it gave the jury "a roving commission to determine what matters occurring after Aug. 7, 1941 are to be explained by evidence relating to treatments prior to June 17, 1941." It is the duty of the jury to sift and evaluate the evidence. The jury must be deemed to have intelligence enough to determine the logical bearing that any bit of evidence may have on the main issues of fact, without having the court specifically point it out to them. The instruction merely directed the jury to disregard any evidence with respect to the prior treatment that, to their minds, had no logical relevancy to the point at issue. Usually, this is a simple mental process, and one that the ordinary lay mind is quite capable of performing. In our opinion, the instruction was proper.

For the reasons stated, the judgment in favor of the patient was affirmed.—*Shipper v. Dr. C. M. Coe, Inc., 174 S. W. (2d) 887 (Mo., 1943).*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 18-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.
American Association for Thoracic Surgery, Chicago, May 5-6. Dr. Richard H. Meade Jr., Kennedy General Hospital, Memphis, 15, Tenn., Secretary.
Arizona State Medical Association, Phoenix, April 14-15. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.
Arkansas Medical Society, Little Rock, April 17-18. Dr. W. R. Brooksher, 602 Garrison Avenue, Fort Smith, Secretary.
Association of State and Territorial Health Officers, Washington, D. C., March 20-23. Dr. G. C. Ruhland, 300 Indiana Ave., N.W., Washington, D. C., Secretary.
Conference of State and Provincial Health Authorities of North America, Washington, D. C., March 22. Dr. A. J. Chesley, State Office Building, St. Paul, Minn., Secretary.
Florida Medical Association, St. Petersburg, April 13-14. Dr. Shaler Richardson, 111 West Adams St., Jacksonville, Secretary.
Iowa State Medical Society, Des Moines, April 21-22. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.
Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, 13, Secretary.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore, Secretary.
Minnesota State Medical Association, Rochester, April 13-15. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.
Missouri State Medical Association, Kansas City, April 23-25. Mr. Raymond McIntyre, 634 N. Grand Blvd., St. Louis, Executive Secretary.
Nebraska State Medical Association, Omaha, May 1-4. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln, Secretary.
New Jersey, Medical Society of, Atlantic City, April 25-27. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.
North Carolina, Medical Society of the State of, May 1-3. Dr. R. D. McMillan, P. O. Box 232, Red Springs, Secretary.
Northern Tri-State Medical Association, Toledo, Ohio, April 11. Dr. Oscar P. Klotz, 127 W. Hardin St., Findlay, Ohio, Secretary.
Ohio State Medical Association, Columbus, May 2-4. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Tulsa, April 24-26. Dr. L. J. Moorman, 1200 N. Walker St., Oklahoma City, Secretary.
Society of American Bacteriologists, New York, May 3-5. Dr. W. C. Frazier, 310 Agricultural Hall, University of Wisconsin, Madison, Wis., Secretary.
Tennessee State Medical Association, Nashville, April 11-13. Dr. H. H. Shoulders, 706 Church St., Nashville, Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Sixteenth Annual Meeting, Held in Chicago, Nov. 5, 1943

The President, Dr. John Walker Moore, Louisville, Ky., in the Chair

The Effect of Choline in the Transport of Fat

Dr. Clifford H. Peters, Aaron B. Kendrick, Ph.D., Dr. Robert W. Keeton and Dr. Jerome T. Paul, Chicago: Choline in the doses given protects the guinea pig against deposition of neutral fat in the liver. The total cholesterol and cholesterol esters are somewhat increased, but phospholipids remain normal. The plasma of animals on experimental diets (no choline) showed definite increases in total lipids, phospholipids and neutral fats. The increases in total cholesterol and cholesterol esters were slight. The plasma of animals on experimental diets plus choline showed similar definite increases in total lipids and neutral fats. The increase in total cholesterol and cholesterol esters was more significant. There was a decrease in phospholipids with an approach to normal values. In the group of animals receiving no A or D supplements, deposition of fat in the liver was less and the cholesterol values were not elevated. In their plasma the neutral fat and phospholipids fractions were elevated, but the cholesterol values were unchanged. These animals gained less weight and had a smaller traffic in fat.

These experiments support the view of fat transport that is gradually crystallizing. The choline furnishes labile methyl groups for the synthesis of phospholipids from fatty acids. When this mechanism is inadequate, cholesterol and cholesterol esters tend to accumulate. In the blood the phospholipids transporting the fatty acids accumulate until extra supplies of choline are furnished and lead to an unloading of the fatty acids in the tissues. The role of cholesterol in the transport of fatty acids seems definite, but secondary to that of phospholipids.

DISCUSSION

Dr. Cecil Striker, Cincinnati: Has Dr. Keeton made studies with lipocaic?

Dr. Keeton: Lipocaic studies were reported in the second paper, in which we noted that 20 mg. of choline did not protect the animals. We found no protection from lipocaic. The standardization of lipocaic solution is difficult and we do not feel that these experiments were conclusive.

Endogenous Hypovitaminemia A and Hypervitaminemia A

Drs. Hans Popper and Frederick Steigmann, Chicago: To study the endogenous changes which apparently are not dependent on nutritional variations, the plasma vitamin A level was determined daily or at short intervals in patients throughout the entire course of the mentioned diseases and compared with liver function tests and the response of the plasma vitamin A level to the intake of high doses of vitamin A (tolerance curve). Futhermore, the attempt was made to correct the hypovitaminemia by oral administration of vitamin A. A permanent success was obtained only with unusually large doses.

Characteristic plasma vitamin curves were obtained. In chronic liver disease, as in cirrhosis, repeated alterations between hypervitaminotic and hypovitaminotic and even avitaminotic stages were observed.

The following factors are apparently responsible for the endogenous change of the plasma vitamin A level: 1. Variation in intestinal absorption, since the tolerance curve is usually low in the hypovitaminemic and high in the hypervitaminemic stage. 2. Shift of the vitamin A within the liver from normal sites to pathologic ones, from which it is not released during the hypovitaminemic stage and from which there is an increased release in the hypervitaminemic stage. 3. Variations of factors within the plasma, such as its ability to hold vitamin A, as evidenced from the hypervitaminemia in some renal conditions in which the liver depots are low.

Cardiospasm and the Normal Esophagus: A Roentgenologic Study of Muscular Action

Drs. Frederic E. Templeton and Paul M. Moore, Cleveland: In cardiospasm the muscular action of the esophagus differs from the normal. The action is not a true peristalsis, as believed by some authors, but resembles the localized or tertiary contractions often seen in older patients.

Twenty-nine patients with cardiospasm were examined in the prone or supine positions with the "spot" machine, which eliminated the effect of gravity on deglutition. Normal as well as abnormal persons having strictures of fibrous or neoplastic origin in the lower esophagus were also observed.

In the normal esophagus three types of muscular action were encountered. The primary wave, a part of deglutition, began in the pharynx and traveled down the esophagus, forcing the bolus along. The secondary wave, which was not initiated by the act of swallowing, usually began in the region of the aortic arch and progressed along the lower half of the esophagus in a manner similar to the primary wave. The tertiary or localized contraction was not peristaltic in character. The lower half of the esophagus, when distended with barium, underwent simultaneous contraction, which varied in degree, was seldom associated with symptoms, was usually momentary, was more or less segmental and did not progress along the esophagus. These changes often appeared as the primary wave reached the arch of the aorta, did not occur with every act of deglutition and were frequently seen in patients past middle age. In 3 pathologic specimens examined, only focal thickening of the muscle was encountered.

In cardiospasm the primary wave, instead of proceeding to the stomach, faded out at the suprasternal notch. In the lower esophagus were peculiar, purposeless, shallow, segmental contractions which constantly appeared and reappeared at different levels. Some progressed for a few centimeters up and down the esophagus, producing an undulating appearance, but they were not sufficiently deep to move the bolus along. They were often accompanied by generalized tonic contractions, which diffusely narrowed the esophageal lumen. This tonic contraction often forced the barium mixture into the stomach, as the cricopharyngeus guarding the upper end of the esophagus remained tightly closed. Amyl nitrite caused all muscular activity to cease, the esophageal lumen to enlarge and the margins to become smooth.

In patients with obstructing lesions produced by peptic ulcer, scars from inflammation and carcinoma, the primary wave was seen.

DISCUSSION

DR. WALTER L. PALMER, Chicago: If I understand Dr. Templeton correctly, he does not include the cases of nonsphincteric spasm with those of cardiospasm. There may be some relationship we do not understand between these conditions. I wonder if Dr. Templeton's failure to note primary peristaltic waves was because the esophagus was dilated. He did observe primary peristaltic waves in certain cases of dilatation secondary to stricture, but dilatation of this type is rarely as great as that in cardiospasm. These findings are of course in accord with the view that cardiospasm is a condition resulting from some type of disturbance in the ganglion cells of the cardia and lower esophagus.

DR. TEMPLETON: Further evidence for absence of the primary wave is an esophagus filled with barium, given with the patient prone or supine, several minutes after swallowing. In the absence of obstruction, the primary wave forces most of the barium bolus into the stomach. The esophageal lumen then appears as a narrow channel.

Postvaccinal (Yellow Fever) Hepatitis; Convalescent Stage

COL. JULIEN E. BENJAMIN, M. C., A. U. S., Fort Devens, Mass.: A study of 200 soldiers who had had jaundice due to postvaccinal hepatitis returned from overseas because of inability to carry on disclosed that some had a clinical syndrome characterized by pronounced tremor of the hands and feet and extremely cold, dripping extremities, and signs of other serious vasomotor disturbances. A number of them showed evidence of hepatocellular dysfunction six months to a year after their attack of hepatitis. It has been determined in conjunction with workers at the Fatigue Laboratory that the exhaustion is actual and subject to calibration.

Preliminary Clinical Observations on the Antianemia Vitamin B_c (Yeast Concentrate)

DR. E. A. SHARP, DR. E. C. VONDER HEIDE and J. G. WOLTER, B.S., Detroit: In a preliminary attempt to assess the hemopoietic activity of vitamin B_c in man, 10 patients were selected. All had been under observation for a year or more and were known to be refractory to the types of therapy applied during that period. For three weeks prior to this study 21 complete blood counts were made on the group. All counts were within the range of 3.0 to 3.5 million erythrocytes per cubic millimeter and 9 to 10 Gm. of hemoglobin per hundred cubic centimeters. In addition, capillary fragility, erythrocytic fragility, prothrombin, bleeding and coagulation times, carbon dioxide combining power, total plasma protein and the albumin: globulin ratio were determined. No alteration was prescribed in diet or in mode of life. All other treatment was discontinued.

The yeast concentrate was specially prepared and assayed for this study. Calculated on the basis of the bioassay in chicks, about 1,000 micrograms of vitamin B_c daily was assumed to be an effective oral dose for an adult. Since tolerance had not been determined, 600 micrograms was given daily per patient during the first week's treatment and gradually increased until all were taking 1,500 micrograms daily.

Analysis of hemopoietic data at the end of four weeks' treatment showed an appreciable increase in the hematocrit but only slight changes in other erythropoietic phenomena. A significant increase in the globulin fraction of the plasma protein was detected at the end of the second week and continued throughout the four weeks of observation. Determinations of urine excretion of the B_c factor were made on 6 of the 10 patients, which showed that the lowest excretion values were coincident with the highest plasma globulin concentration.

DISCUSSION

DR. WALTER L. PALMER, Chicago: This paper implies that there is a group of anemias which are iron resistant, which are not pernicious anemia and which are not sprue or any of the well recognized vitamin deficiency diseases. Have carefully controlled studies been made on such patients over long periods of time as to the effect of large amounts of crude yeast in the absence of iron? Do we have conclusive proof that there is a small group of anemias which are benefited by vitamins and do not belong to the specific group such as pellagra and sprue?

DR. SHARP: We encounter nonresponsive anemias not infrequently and have tried practically everything that has been offered for antianemic therapy, including large amounts of yeast, all the vitamins, iron and various combinations of liver, stomach and hormones. The patients to whom we referred have all been through that regimen in treatment in the hope a therapeutic lead of value would be encountered.

The Constitution of Prothrombin and Its Clinical Significance

DR. ARMAND J. QUICK, Milwaukee: Experimental evidence indicates that prothrombin is composed of two components (designated A and B), which are combined through calcium. When blood is stored, a progressive fall in prothrombin occurs, and likewise when an animal is fed dicumarol a decrease in prothrombin is observed. On mixing the two types of plasma, a complete restoration of prothrombin results as determined by Quick's method. The loss of prothrombin in the two plasmas therefore cannot be identical. Apparently, one essential prothrombin factor is lost in storage and another by the action of dicumarol.

For convenience the factor that disappears in stored blood has been named component A. Significantly, undecalcified blood or plasma shows no loss of prothrombin on aging. This suggests that component A when combined in the prothrombin complex is stable. The component is not adsorbed by aluminum hydroxide.

Component B is the factor which becomes depleted after feeding dicumarol and probably also in vitamin K deficiency. It appears on the body of the prothrombin complex. It is adsorbed by aluminum hydroxide from decalcified plasma but not from unaltered blood or plasma. Presumably when component B is combined in the prothrombin molecule with A and calcium it is not adsorbable.

Calcium is an essential part of the prothrombin molecule. Less sodium citrate is required to make human blood incoagulable in the presence of excess thromboplastin than that of the dog or rabbit. This is in accord with my finding that the latter contains much less prothrombin than rabbit or dog bloods. By removing the calcium the prothrombin molecule is disrupted and components A and B are liberated, but on recalcification the prothrombin complex is promptly resynthesized.

On the basis of this new concept concerning the constitution of prothrombin, a more exact classification of the various types of hypoprothrombinemias is possible. Clinically or experimentally no cases of component A depletion have as yet been found. In chloroform hepatitis a reduction of both components occurs. As a result of the present finding the pitfall in the determination of prothrombin becomes more evident. Possible errors due to the effect of high dilution on the individual components may perhaps explain discrepancies between the one and two stage methods. The use of stored blood to treat the hypoprothrombinemia due to dicumarol in the light of the new information seems logical. Since banked plasma loses only component A but retains all of its B factor, it should be as effective as fresh blood in counteracting the prothrombinopenia of dicumarol, which is characterized by a depletion of B but no loss of A.

DISCUSSION

DR. E. A. SHARP, Detroit: My experience two years ago in studying vitamin K and substitutes supports in a measure Dr. Quick's observations. I was working with whole blood, using heparin as an anticoagulant continuously in transporting blood from various institutions. During the hot weather the blood occasionally remained in the containers for several hours before being stored in the refrigerator. Two years ago I was not able to detect any difference when I determined the prothrombin immediately after storage when heparinized. However, I did find difficulties when oxalate and other anticoagulants were used.

DR. OVID O. MEYER, Madison, Wis.: The hypoprothombinemia of vitamin K deficiency is corrected with the administration of vitamin K, as is the hypoprothombinemia or obstructive jaundice. Large doses of vitamin K, 10 mg. administered daily, does not correct the hypoprothrombinemia of dicumarol administration, but recent work indicates that extremely large doses of vitamin K or the administration of vitamin K_1 oxide do result in correction of the hypoprothrombinemia of dicumarol administration. These observations, in view of Dr. Quick's statements, require an explanation.

DR. CARL V. MOORE, St. Louis: In vitamin K deficiencies, what changes occur in the B component of prothrombin?

DR. QUICK: In regard to Dr. Moore's question, I have had occasion to examine the blood of patients with mild hypoprothrombinemia. Cases with severe depletion of prothrombin are hard to find because they are usually treated with vitamin K early. In the cases I have studied, there has been a diminution of the component B. With regard to chloroform poisoning there is indication that both component A and component B are somewhat decreased, probably B more than A. Component A apparently is not a part of the final thrombin molecule, because in aged serum component A is still present.

Hematologic Complications of Therapy with Radioactive Phosphorus

DR. L. A. HEMPELMANN JR., DR. E. H. REINHARD, O. S. BIERBAUM, B.S., DR. CARL V. MOORE and DR. SHERWOOD MOORE, St. Louis: Severe degrees of leukopenia and thrombocytopenia have been observed in approximately one third of 49 patients with various types of hematologic dyscrasias who were under treatment with radioactive phosphorus. Seventeen patients also showed a decrease in erythrocytes. In a few instances these changes may have been produced by the disease itself, but in most cases they were attributable directly to the therapy.

Among the 49 patients included in this series, diagnoses were distributed as follows: chronic myelogenous leukemia 15, chronic lymphatic leukemia 10, leukosarcoma 3, monocytic leukemia 2, Hodgkin's disease 4, reticulum cell sarcoma 2, polycythemia vera 7, multiple myeloma 4 and mycosis fungoides 2. Twenty of these patients have died and 29 are still living. Except in the cases of polycythemia vera, the radioactive phosphorus was administered according to the simple fractional method described by Low-Beer, Lawrence and Stone; an effort was made to bring the blood counts to normal and to maintain them at or near normal levels.

The most characteristic changes which developed in the blood of the patients under treatment with radioactive phosphorus was (1) a fall in the leukocyte count, (2) a fall in platelets and (3) a decrease in erythrocytes. All three changes did not necessarily occur in the same individual. Thrombocytopenia of severe degree occasionally developed in patients with leukemia one or two months after the white blood cell numbers had fallen to approximately the normal level and the differential count had improved remarkably. Platelet counts below 100,000 per cubic millimeter were seen in 15 patients, and in many they were low enough to be accompanied both by purpura and by hemorrhage from mucous membranes. One subject with polycythemia vera developed an angina-like ulceration in her mouth when her leukocytes decreased to 1,000 cells per cubic millimeter. In, no instance did any of these complications per se cause death of the patient, but in at least 7 patients they did cause symptoms and excited considerable anxiety.

The value of radioactive phosphorus in the treatment at least of patients with chronic myelogenous leukemia, chronic lymphatic leukemia and polycythemia vera is not deprecated. In most instances the changes produced in the leukocytes of patients with leukemia and in the red blood cells of subjects with polycythemia vera were satisfactory. Three patients whose platelet counts were low before treatment was begun showed a significant increase, and the erythrocyte levels of 7 patients with leukemia rose a million or more cells. Emphasis, however, is given to the fact that severe degrees of leukopenia and thrombocytopenia may be produced by radioactive phosphorus therapy. Frequent blood studies should be made during treatment so that these complications may be recognized before they become severe or before the damage to bone marrow becomes irreversible.

DISCUSSION

DR. EMMET B. BAY, Chicago: What is the half-life of radioactive phosphorus?

DR. DOUGLAS DEEDS, Denver: Were untoward hematologic reactions noted after single injections of radioactive phosphorus at intervals of approximately one month? In the treatment of polycythemia did the hemoglobin and erythrocyte count ever fall below normal figures?

DR. REINHARD: The half-life of radioactive phosphorus is 14.3 days. In most of our cases of polycythemia vera the leukocyte count, which was usually elevated above normal, began to fall two to three weeks after treatment with radioactive phosphorus was started, whereas the erythrocyte level as a rule began to fall six to eight weeks after the first treatment. In most cases the platelet count showed no significant change at any time. Several of our patients with polycythemia vera were overtreated and developed some degree of anemia. They were overtreated in spite of the fact that, as a rule, we used smaller doses of radioactive phosphorus than have been advocated by most investigators who have used this material. We believe that smaller doses than have generally been employed in the past will suffice. For the last six months instead of giving polycythemic patients a single large dose we have given them small doses at weekly intervals until the red count begins to fall; treatment is then discontinued until the erythrocyte and hemoglobin levels become stabilized. A longer time is required to get the patients under control, but there is less danger of overshooting the mark and producing an anemia.

Effect of Splenic Irradiation on Increased Vascular Erythropermeability in Purpura

DRS. F. W. MADISON, T. L. SQUIRE and S. A. MORTON, Milwaukee: Sixteen cases of purpura, entirely unselected as for etiology or presence or absence of coexisting coagulation defects, were given splenic irradiation in doses of 50 to 200 roentgens with voltage of 140 peak kilovolts and filter 0.25 mm. of copper every second or third day for three to five doses. Vascular erythropermeability was checked by the positive pressure method. Bleeding time was determined by the use of a sharp spring lancet set to penetrate 3 mm. in the ear lobe. Platelets were counted by the citrate method. All the cases were kept under observation for a considerable period of time before and after irradiation and the vascular changes checked frequently.

Thirteen cases showed moderate to pronounced reversal of the vascular lesions while 3 cases showed minimal to no response. Platelet changes were variable and transient. Alterations in bleeding time were roughly parallel to the changes in vascular erythropermeability. All the cases which failed to show vascular response were cases in which the purpura was secondary to a blood dyscrasia of leukemic type and all have terminated fatally. All the cases which showed reversal of erythropermeability were of essentially benign and reversible type, many of them being of allergic origin, and none of them have terminated fatally.

The reversal of vascular erythropermeability in the cases in which it occurred was similar to that seen after splenectomy but except in those instances in which the fundamental etiologic factors were removed was of relatively short duration, rarely lasting more than two or three months.

These findings suggest that irradiation of the spleen may be a valuable temporary measure in stopping spontaneous vascular leakage in selected cases of purpura whether or not there is an associated thrombocytopenia or hypoprothrombinemia. If such

an association exists it is extremely important to eliminate such vascular leakage promptly. Failure of response of vascular changes to splenic irradiation strongly suggests that the purpura is secondary to progressive or malignant disease. Satisfactory response to irradiation may suggest that, if other therapy fails, splenectomy is likely to be beneficial.

DISCUSSION

DR. ARMAND J. QUICK, Milwaukee: Did these spleens that were irradiated and then removed show any characteristic pathologic changes?

DR. MADISON: We have had only 1 such instance and in that case the spleen was not removed in Milwaukee, so that we did not have an opportunity to study the pathologic state of the spleen.

Effect of Digitalis on the Clotting Mechanism

DR. N. C. GILBERT, R. A. TRUMP, B.S., and DR. GEZA DE TAKATS, Chicago: The clotting mechanism of dogs was studied daily for ten to fourteen days by determining their response to heparin. After checking the normal response, we digitalized the dog to the point of intoxication. The resistance of dogs to heparin became pronounced. When digitalis was stopped, the reaction to heparin became normal. Sodium tetrathionate protected the same dogs from this heparin resistance when they were digitalized again.

Embolic phenomena have occurred after maintenance doses of digitalis have been unnecessarily raised. Our animal experiments suggest that the tendency to thrombosis is increased by digitalis; in auricular fibrillation stasis in the auricle is already present. In 6 cases digitalization, embolic phenomena and changes in the clotting mechanism seemed to coincide.

DISCUSSION

DR. EDWARD MASSIE, St. Louis: The clotting time of 24 patients was determined during an initial control period, then during digitalis administration and subsequently after the drug was stopped. The Lee-White method was used for the clotting time determinations. The coagulability of the blood was found to be accelerated during digitalization in each of the 24 cases, with an average decrease of 3.3 minutes for the entire group. Statistically the results were found to be significant. In 13 cases a study was made of the differences between the clotting times during and after digitalis administration. In the majority of the patients an increase in the clotting time resulted following cessation of the medication. Studies on clot retraction and prothrombin time revealed that digitalis had no significant effect on these determinations. The mechanism by which digitalis administration accelerates blood coagulation has not been elucidated, but it is our impression that the digitaloid drugs may have a thromboplastic effect on the clotting mechanism.

DR. OVID O. MEYER, Madison, Wis.: Dr. Mead Burke in our department of pathology found that thrombosis which was frequently overlooked prior to postmortem examination was of more common occurrence in the medical than in the surgical service. He found the incidence of thrombosis to be particularly high in patients with cardiac decompensation; the occurrence was most frequent during the first week after the patient was put to bed. This we have attempted to explain largely on the basis of stasis. The period of greatest incidence corresponds to the period when the reduction of coagulation time is more pronounced following the exhibition of digitalis. The coagulation times obtained by Dr. Massie, which averaged about 13 to 14 minutes, appear to have been done at room temperatures on venous blood because they are so long. If the coagulation time is done with a water bath at a temperature of 37.5 C. the normal coagulation time is shorter, the fluctuations are less and the accuracy is greater. An average variation of between 1 and 2 minutes would be thought to be insignificant, particularly when starting with a control level of 13 to 14 minutes. Hence one should perhaps be cautious in attributing significance to these figures.

DR. L. N. KATZ, Chicago: The trend toward accelerated clotting is clear, and the evidence is therefore convincing to me. The importance of this study is that the general belief that digitalis below toxic doses will cause no harm to the cardiac patient may not be entirely true, since the evidence in this report suggests that the clotting mechanism is facilitated. Care must be used in administering digitalis in conditions in which evidence of thrombosis is present.

DR. M. J. SHAPIRO, Minneapolis: Embolic manifestations are certainly not uncommon in patients with coronary thrombosis or rheumatic heart disease who have never received digitalis.

DR. EMMET B. BAY, Chicago: Were the animals in good condition that were receiving 0.2 to 0.3 Gm. of digitalis per day over a period of time and was there any evidence of hemoconcentration?

DR. TAKATS: Some explanation is necessary as to why we used the heparin tolerance instead of a single coagulation time. As shown by Dr. Massie, the decrease in coagulation time, while statistically significant, is not so clearcut as the change in the tolerance curve. It is only for that reason that we resorted to this test, which is no more complicated because it was taken on capillary blood. Last year the question was raised whether it is permissible to draw conclusions from the capillary coagulation time. It does not seem necessary to use venous coagulation time. In a series of patients that have a 2½ to 3 minute coagulation time one can raise them to 6 minutes by the capillary method, and we have done that. We have not intended to show that digitalis was the only factor producing embolism. I have seen just as many patients who never received digitalis develop embolism. Stasis does not seem sufficient in itself to produce thrombosis. These patients have had fibrillation for years and years. There must be a second factor operating to produce thrombosis. That factor may be infection or it may be a change in the clotting mechanism, the change which we found digitalis produces. We have previously shown with the heparin tolerance tests that in the postoperative state the patient's clotting mechanism undergoes considerable change.

Correlation of Clinical Types with Renal Function in Arterial Hypertension: II. Effect of Spinal Anesthesia

DRS. IRVINE H. PAGE, R. D. TAYLOR, A. C. CORCORAN and LILLIAN MUELLER, Indianapolis: Spinal anesthesia to the nipple line was administered to 8 patients tentatively identified as "neurogenic" and 6 designated essential, and the renal effect was observed by determination of plasma diodrast and inulin clearance and arterial pressure. The levels obtained during anesthesia were compared with observations made under resting conditions. No consistent change of arterial pressure or renal blood flow or resistance was noted in the essential hypertensives, a finding in agreement with the experiences of others in normotensive subjects. In the so-called neurogenic group, all showed an increase of renal resistance blood flow and all but 1 a decrease of arterial pressure; a renal resistance was consistently decreased. These findings point to a participation of neurogenic vasoconstriction in the arterial hypertension of certain patients and suggest a means of differentiating these from patients whose hypertension and vasoconstriction are humoral in origin. It is conceivable that such a procedure as this might provide an objective basis for the selection of patients for thoracolumbar sympathectomy.

DISCUSSION

DR. GEZA DE TAKATS, Chicago: It would be extremely fortunate to have a method of differentiating patients suffering from so-called neurogenic hypertension from those having essential hypertension. Has Dr. Taylor any data on patients with normal blood pressure to indicate whether they maintain their blood pressure during spinal anesthesia? Certain patients with normal blood pressure on whom I have operated under spinal anesthesia had a rapid fall in pressure, and again others maintained the blood pressure at a stable level. The question then is whether the authors are simply measuring the state of the vasomotor center and whether this may not be the only difference between essential and so-called neurogenic hypertension. In patients operated on under general anesthesia for hypertension we have noticed a group which we would like to call neurogenic because they are sensitive to carbon dioxide. As soon as there is an accumulation of carbon dioxide the pressure rises. This led to the use of 10 per cent carbon dioxide inhalations preoperatively

to select the patients for operation. This seems to be an effective and perhaps a little simpler method than to subject the patient to a high spinal anesthesia.

DR. GEORGE E. WAKERLIN, Chicago: Was there any difference in the length of the history of hypertension in the neurogenic as compared with the essential groups? I have in mind the possibility that the neurogenic type may represent an early phase of essential hypertension.

DR. A. C. CORCORAN, Indianapolis: The effects described in this presentation are those seen during the period of roughly twenty-five minutes' full anesthesia. As anesthesia recedes and blood pressure rises, renal vasoconstriction returns in those patients in whom it had been modified by the anesthesia. The cause of the renal vasodilatation in neurogenic hypertension remains speculative. In large measure it seems to lie in the normal tendency of the renal circulation to maintain itself during changes of arterial pressure. As pressure falls arterioles dilate, and as it rises they constrict; renal blood flow and glomerular filtration pressure thus tend to remain constant during wide variations of blood pressure, and the glomerular capillaries are protected from excessive pressures. We have recorded elsewhere (Corcoran, A. C., and Page, I. H.: *Am. J. Physiol.* **126**:354 [June] 1939) instances of this sort. In this view the renal vasodilatation seen in the neurogenic group effects normal response to variations of blood pressure rather than specific deprivation of abnormal vasomotor influence. The major demonstration therefore may express the greater lability of the renal vasculature in so-called neurogenic hypertension.

DR. IRVINE H. PAGE, Indianapolis: The problem of whether a certain part of patients classified as essential hypertensives are of neurogenic origin is a nebulous one. Most of us have, I think, been impressed by the large factor of nervous hyperactivity in some of these patients. Indeed I have felt that essential hypertension might in some cases have its origin in some form of nervous disturbance. There appears to be a definite correlation between the occurrence of overstimulation by the nervous system and prognosis in hypertensives. A group of patients described as having the "hypertensive diencephalic syndrome" seem to have a better prognosis than the more usual hypertensive. The term "neurogenic" implies a great deal and hence deserves to be used only with great caution. It implies that the hypertension is of nervous origin and that we know how to make the diagnosis. Certainly convincing proof has not been brought that hypertension is due to an overactive nervous system. Nor have we had sufficient objective evidence to make the diagnosis. While we recognize that study of renal function done under spinal anesthesia is not a simple bedside procedure, it may ultimately make diagnosis more certain. We hope to stimulate the search for methods which will prove or disprove the concept of "neurogenic" hypertension.

DR. TAYLOR: In answer to the question of Dr. de Takats regarding the effects of spinal anesthesia on the arterial pressure in normal persons we can only state that Smith's cases demonstrated a mean fall of — 17 per cent. In the few normals we have observed, all showed a fall in pressure when the anesthesia extended to the nipple line. I am certain that many "neurogenic" hypertensives do develop essential hypertension if the condition exists long enough. Some observers have seen patients with "neurogenic" hypertension who have elevated filtration fractions. We have seen this type of patient. Further, we have seen many patients with the typical clinical picture of "neurogenic" hypertension of fifteen years' duration who have shown advancing vascular disease in the ocular fundi, the heart and the kidneys. We haven't compared the renal changes resulting from high spinal anesthesia to the effects of pentobarbital. However, 2 patients anesthetized with sodium seconal did not show the decreased arteriolar resistance reported here.

Treatment of Experimental Renal Hypertension with Renal Extracts

DR. G. E. WAKERLIN, CLARENCE A. JOHNSON, PH.D., W. G. MOSS, M.S., and DR. M. L. GOLDBERG, Chicago: We have recently completed studies of the therapeutic effects of a more highly purified hog renin in 1 and 3 Gm. doses, partially purified heat inactivated hog renin in 3 Gm. doses, partially purified dog renin in 3 Gm. doses and partially purified liver extract prepared after the manner of renin in 3 Gm. doses in renal hypertensive dogs. The results suggest that the therapeutic effects of hog renal extracts containing renin are not due to renin but to some other substance or substances in the extracts, as highly purified hog renin is less effective therapeutically than partially purified hog renin. There was no correlation between the reductions in blood pressure produced by highly purified hog renin (or failures thereof) and the antirenin titers of the dogs. The results confirmed the ineffectiveness of partially purified dog renin as an antihypertensive agent in experimental renal hypertension. They suggest that the antipressor substance is partially heat stable, as heat inactivated hog renin in 3 Gm. doses was moderately antihypertensive. However, none of the dogs treated with the heat inactivated extract showed antirenin. The results also suggest that the therapeutic effects are specific for kidney and not due to a foreign protein effect, since the hog liver extract was ineffective antihypertensively. Toxic manifestations, including fever, were never observed in any of the dogs.

DISCUSSION

DR. IRVINE H. PAGE, Indianapolis: These results add to the present belief that extracts of kidneys can lower blood pressure. Renin itself does not appear to be the agent causing lowering of arterial pressure, and I think Dr. Wakerlin has given up the belief that antirenin causes the lowering of pressure, though Goldblatt is by no means ready to give it up.

DR. CARL C. SMITH, Cincinnati: A kidney extract that we use in Cincinnati was produced as the result of a long series of experiments on rats and dogs and was used for patients. It contains no renin, angiotoninase, amylase, lipase or proteolytic activity. It did reduce the blood pressure of hypertensive rats, dogs and human subjects. This would seem to confirm the suggestion of other investigators that the ability of kidney extracts to lower high arterial blood pressures may be nonspecific and does not depend on their renin or angiotoninase activity.

The Precordial and Esophageal Electrocardiogram in the Wolff-Parkinson-White Syndrome (Anomalous Atrioventricular Excitation)

DRS. FRANCIS F. ROSENBAUM, FRANK N. WILSON and FRANLIN D. JOHNSTON, Ann Arbor, Mich.: We have employed thoracic and esophageal leads in the study of 8 patients with anomalous atrioventricular excitation. Seven precordial leads were taken in all cases. Additional leads from the entire circumference of the chest at the level of the cardiac apex were used in 4 cases and multiple esophageal leads in 3 cases. Transitions from anomalous to normal complexes were observed in 2 patients. Atrioventricular rhythm was produced in 1 patient. Four of the patients had had paroxysmal tachycardia. These observations suggest that in the majority of cases of anomalous atrioventricular excitation ventricular activation begins on the posterior wall near the base and toward the right margin. The variation in form of the deflections suggests that there are corresponding variations in the order of ventricular activation, but some may depend on the position of the heart. The precordial electrocardiogram in anomalous atrioventricular excitation is not characteristic of either right or left bundle branch block. These studies offer some evidence to support the accessory conducting pathway theory of anomalous atrioventricular excitation. There is no definite correlation between the standard leads and the thoracic and esophageal leads in the cases studied thus far.

DR. HANS H. HECHT, Eloise, Mich.: The syndrome which Dr. Rosenbaum calls anomalous atrioventricular excitation is rare. I have had 2 cases which were studied with serial precordial and serial esophageal leads. Both showed, as expected, premature activation of the right ventricle. Any study of this type must employ a neutral electrode. R waves in chest leads are easily influenced by a non-neutral electrode placed, for instance, on the left leg or right arm.

DR. ROSENBAUM: We have seen electrocardiograms with short PR intervals and normal QRS complexes in patients with hypertensive heart disease. In our experience the precordial electrocardiograms of such patients have shown left ventricular hypertrophy.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

13:217-244 (Jan.) 1944

Discussion of Focal Infection. F. W. Wilkerson.—p. 217.
Foreign Bodies in Esophagus and Lower Respiratory Tract. G. E. Fisher.—p. 220.
Intestinal Obstruction. P. P. Salter.—p. 227.
Ureterocervical Fistula: Report of 2 Cases. J. P. Robertson.—p. 232.

American Journal of Clinical Pathology, Baltimore

13:627-680 (Dec.) 1943

Pathology of Trichinosis. S. E. Gould.—p. 627.

American J. Digestive Diseases, Fort Wayne, Ind.

10:443-460 (Dec.) 1943

Treatment of Dysentery Carriers with Succinylsulfathiazole: Observations on Minimal Effective Dose. P. S. Barker.—p. 443.
Gall Bladder Functions after Subtotal Gastrectomy: Clinical and Roentgenologic Observations. I. R. Jankelson and S. A. Robins.—p. 445.
Early Experimental Fistulas of Stomach. M. H. F. Friedman.—p. 447.

Annals of Surgery, Philadelphia

118:921-1088 (Dec.) 1943

*Planned Timing in Treatment of Wounds and Infections by Means of Infrequent Occlusive Dressings. F. B. Gurd, D. Ackman and F. Smith.—p. 921.
Continuous Caudal Analgesia in Surgery. J. L. Southworth and R. A. Hingson.—p. 945.
Advances in Spinal Anesthesia. R. A. Hingson, C. H. Ferguson and L. A. Palmer.—p. 971.
*Further Experiences with Adrenal Cortical Extract in Treatment of Burn Shock. J. E. Rhoads, W. A. Wolff, H. Saltonstall and W. E. Lee.—p. 982.
Use of One Flap to Restore Extensive Losses of Middle Third of Face. A. J. Barsky.—p. 988.
Partial Fundusectomy (Proximal Gastrectomy): Review of 24 Cases. F. G. Connell.—p. 1000.
Peptic Ulcer and Chronic Gastritis. V. P. Collins.—p. 1005.
Protein Metabolism and Bed Sores. J. H. Mulholland, Co Tui, A. M. Wright, V. Vinci and B. Shafiroff.—p. 1015.
Saphenous (Ligation) Resection in Obese. G. R. Dunlop.—p. 1024.
Carcinoma of Breast: II. Criteria of Operability (continued). C. D. Haagensen and A. P. Stout.—p. 1032.
Amputation Neuroma in Nerves Implanted in Bone. E. Boldrey.—p. 1052.
Intravenous Gelatin. A. Brunschwig, Nancy Corbin and C. D. Johnston.—p. 1058.
Surgical Treatment of Malignant Lymphoma. E. A. Gall.—p. 1064.

Treatment of Wounds by Infrequent Occlusive Dressings.—Gurd and his associates show how surgical principles can be coordinated by organized timed technic. The principles include efficient first aid by occlusive dressings, relief of pain, hemostasis and temporary splinting; excision or débridement of fresh wounds; (*a*) surgical antisepsis or its more recent descendant bacteriostasis; (*b*) surgical asepsis; wound (curtain) drainage by the employment of packing gauze impregnated with liquid petrolatum; closed or occlusive dressings; rest of the part; infrequent change of dressings with proper drainage. Closed infrequent dressings secure rest, prevent or limit bacterial contamination and improve the circulation while retaining within the dressing antibacterial and other beneficent products of the body's immunologic armamentarium in the exuded serum and draining the wound by petrolatum impregnated gauze packing and promoting bacteriostasis. Six essential features are necessary for the success of this technic. Timing is of first importance. It is a mistake to attempt a surgical operation in fresh trauma before shock and hemorrhage are controlled. If operation is delayed too long, the risk of infection is enhanced. The second feature is efficient first aid in emergency cases by control of hemorrhage, prevention of contamination by large sterile gauze dressings, minimization of shock by alleviation of pain, and splinting where necessary. The third feature is the control of shock and hemorrhage as far as it is possible before definitive surgical treatment is begun. This rule does not preclude the necessity for minimal early procedures to save life. The fourth factor is adequate surgery, which in fresh trauma includes exploration and wound excision and, in infection, adequate wound drainage. The fifth feature is immobilization of the part by plaster of paris, starch bandages or pressure dressings. The sixth factor is the timing of the change of dressing, which should be as infrequent as possible. The indication for changing the dressing and investigating the wound are persistence of pain, persistence of edema, persistence or development of fever and development of circulation difficulty.

Adrenal Cortex Extract in Burn Shock.—Rhoads and his collaborators report 53 cases seen at seven Philadelphia Hospitals between September 1942 and January 1943. The cases selected fulfilled four criteria: (1) at least 8 per cent of body surface burned; (2) at least an 8 point rise in the hematocrit; (3) local treatment by a tanning method except for the hands and face and genitalia; (4) plasma transfusion between the twelfth and the thirtieth hour after the burn amounting to at least two thirds of the estimated plasma deficit. They found that 12 patients with extensive superficial burns who received adrenal cortex extract did not retain plasma given by transfusion any better than did 13 control patients who received no extract.

Archives of Otolaryngology, Chicago

38:541-650 (Dec.) 1943

Analysis of 100 Consecutive Cases of Aural Disease in an Army General Hospital. J. J. Conley.—p. 541.
Incorrect Treatment of Osteomyelitis of Frontal Bone. A. C. Jones.—p. 547.
Chronic Suppurative Otitis Media: Revision of Therapeutic Practice. L. J. Lawson.—p. 550.
Secretory Otitis Media: Illustrated with Photographs of Tympanic Membrane in Natural Color. I. Hantman.—p. 561.
Mucocele of Frontal Sinus: Report of 5 Cases in Two of Which at Operation the Mucocele was Found to be Empty. W. J. McNally, E. A. Stuart and A. E. Childe.—p. 574.
Peroral Endoscopy. L. H. Clerf and T. T. Smith.—p. 597.

Bulletin New York Academy of Medicine, New York

20:1-70 (Jan.) 1944

Some Recent Developments in Physiology of Stomach and Intestine Which Pertain to Management of Peptic Ulcer. A. C. Ivy.—p. 5.
Benign and Malignant Lesions of Stomach. A. W. Allen.—p. 15.
Disorders of Digestive System Leading to Vitamin Deficiency States in Infants and Children. R. McIntosh.—p. 25.
Present Status of Ulcerative Colitis and Regional Enteritis. J. A. Bargen.—p. 34.
Basis of Classification of Disorders from Psychosomatic Standpoint. L. S. Kubie.—p. 46.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

72:1-90 (Jan.) 1944

*Sulfaguanidine in Treatment of Bacillary Dysentery: Study of 520 Cases. S. G. Page Jr.—p. 50.
Clinical Survey of Scrub Typhus Fever. B. L. Lipman, R. A. Byron and A. V. Casey.—p. 63.
*Staphylococcal Enterotoxin in Bread Pudding. P. D. DeLay.—p. 71.
Neuromuscular Electrodiagnosis (an outline). S. Licht.—p. 74.
Acrylic Half-Splint. L. Mackta.—p. 81.
Hysterical Amblyopia: Report of Cases. H. J. Halpern.—p. 84.

Sulfaguanidine in Bacillary Dysentery.—Page reports 520 cases of acute bacillary dysentery treated with sulfaguanidine at the 151st Station Hospital in Northwest Africa. All presented typical symptoms of acute dysentery, with the passage of from five to fifty daily stools containing blood, pus and mucus and exhibited extreme prostration, chills, fever, nausea, vomiting, weakness, tenesmus, anorexia and dehydration. The patients were placed at strict bed rest in special isolated wards. The diet consisted of liquids such as bouillon, soups with added salt, tea, fruit juices, chocolate milk, liquid gruel and gelatins. The patients were usually able to retain a soft diet within the first twenty-four to forty-eight hours. A regular diet was given when their temperatures became normal. A ten day course of sulfaguanidine was started immediately after a stool was obtained for culture. An initial dose of 7 Gm. was followed by 3.5 Gm. every four hours for the first forty-eight hours. After that 3.5 Gm. was given every eight hours to complete a ten day

course averaging a total dosage of 130 Gm. A bismuth compound 1 Gm. and camphorated tincture of opium 4 cc. were given every eight hours as necessary for the relief of severe abdominal griping and tenesmus. Fourteen patients failing to respond to the initial ten day course of sulfaguanidine were given a five day course of sulfadiazine. Patients were given a total of 3,000 to 3,500 cc. of fluid daily. There were no deaths or serious complications. Three cases of drug fever responded to withdrawal of the drug. More than 91 per cent (190 cases) of the positive cases were due to Shigella paradysenteriae, while not quite 8 per cent (18 cases) were caused by Shigella sonnei. Shigella paradysenteriae appears intermittently in the stools of both the treated and the untreated patients. Three negative stool cultures were inadequate as proof of the noninfectivity of the patient.

Staphylococcic Enterotoxin in Bread Pudding.—DeLay describes an outbreak of characteristic staphylococcic food poisoning. Enterotoxigenic staphylococci were obtained from bread pudding served at the meal following which the outbreak occurred. About 400 men were affected following an evening meal at which 600 men were served. The bread pudding consisted of bread chopped with a hand knife, pasteurized milk, evaporated milk, dried apricots, sugar and eggs. Following its preparation the pudding was placed on a shelf beneath a steam table and held until served at the evening mess of the following day. The table had been heated for one hour periods during the morning and noon mess; other than at these periods the pudding was held at about 75 F. These cases of food poisoning demonstrate the need for adequate refrigeration facilities and the necessity of using these facilities for certain foods.

Journal of Nat. Cancer Inst., Washington, D. C.

4:249-338 (Dec.) 1943

Principles of Species Adjustment: I. Continuous Exposure. R. R. Spencer and M. B. Melroy.—p. 249.
Id.: Discontinuous Exposure. R. R. Spencer, M. B. Melroy and Dorothy Calnan.—p. 257.
Experimental Chemotherapy of Tumors in Mice. F. C. Turner.—p. 265.
Enzymatic Activity of Normal Adult, Regenerating, Fetal and Neoplastic Hepatic Tissues of Rat. J. P. Greenstein and J. W. Thompson.—p. 271.
Range in Activity of Several Enzymes in Normal and Neoplastic Tissues of Mice. J. P. Greenstein and J. W. Thompson.—p. 275.
Note on Liver Catalase Activity of Pregnant Mice and of Mice Bearing Growing Embryonic Implants. J. P. Greenstein and H. B. Andervont.—p. 283.
Effects of Feeding Heated Lard to Rats, with Histologic Description of Lesions Observed. H. P. Morris, C. D. Larsen and S. W. Lippincott.—p. 285.
Influence of Irradiation Killed Cells on Tumor Growth. P. S. Henshaw, with technical assistance of H. L. Meyer.—p. 305.
Induction of Pulmonary Tumors in Mice with Ethyl Carbamate (Urethane). A. Nettleship and P. S. Henshaw, with technical assistance of H. L. Meyer.—p. 309.
Ascorbic Acid Content of Tumors and Homologous Normal Tissues. W. Van B. Robertson.—p. 321.
Spontaneous, Transplantable, Adrenal Cortical Tumor Arising in Strain C Mouse. A. J. Dalton, J. E. Edwards and H. B. Andervont, with technical assistance of Virginia C. Briggs.—p. 329.

Journal of Nervous and Mental Disease, New York

98:571-696 (Dec.) 1943

Spasmodic Torticollis. R. M. Patterson and S. C. Little.—p. 571.
Notes for an Intimate History of Neurology and Psychiatry in America. L. Casamajor.—p. 600.
Calcified Subdural Hematoma. D. A. Boyd Jr. and P. Merrell.—p. 609.
*Electric Shock Therapy in Treatment of Schizophrenia, Manic Depressive Psychoses and Chronic Alcoholism. C. A. Neymann, V. G. Urse, J. J. Madden and M. A. Countryman.—p. 618.
Some Aspects of Mind in Asthma and Allergy: Comparative Personality Study of Two Groups of Clinical Cases. E. A. Brown and L. Goitein.—p. 638.
*Death During Sulfonamide Treatment: Finding of Liver Cells in Brain. O. Pollak and J. M. Ziskind.—p. 648.

Electric Shock Therapy.—Neymann and his associates report observations on electric shock therapy at the Cook County Psychopathic Hospital. In schizophrenic patients currents of 300 to 600 milliamperes at potentials between 90 and 120 volts lasting from three tenths to five tenths of a second usually produce a convulsion. In affective disorders more electrical energy is needed. A large part of the electrical energy is dissipated by passing through the skin. Daily treatments are feasible. It is suggested that the patient be treated until thoroughly confused; then he should be rested and examined as to his insight. A second or third series of treatments may be given a patient who has not recovered after the first or second series. Subconvulsive shocks are painful and terrifying. Convulsive electric shocks are not painful and produce a short retrograde amnesia. Treatment with subconvulsive shocks was ineffective. The pure psychic suggestion of this treatment did not have much if any effect in producing the recoveries observed. Ninety schizophrenic patients were treated by this method. Thirty-one are at present listed as recovered. Twenty-one of them have been working for from six to twenty months. Eleven have been listed as improved. The recovery rate was greatest in the paranoid group. Old deteriorated schizophrenic patients who have been psychotic for years are not greatly benefited by this treatment. Fifteen patients with depressive states were treated. Eleven with depressions recovered, 4 improved. Five chronic alcoholic addicts were treated without favorable results. Dementia or flattening of the personality was not observed in the recovered group after electric shock therapy.

Death During Sulfonamide Treatment.—The subject of the report by Pollak and Ziskind was a girl aged 14 with disseminated lupus erythematosus who acquired otitis media and pneumonia complicated by cerebral signs. She was treated at different times with sulfathiazole, sulfanilamide and sulfadiazine. Necropsy revealed toxic reactions but no inflammation, particularly in the liver, kidneys, adrenal glands, pancreas and nervous system. Fatty degeneration in the liver and kidneys was far in excess of the fatty degeneration commonly accompanying pneumonia. The meningitis was obviously terminal, but its occurrence is evidence that the sulfonamides failed in inhibiting the inflammatory process, which was due to the otitis. Emboli of necrotic cells were found in the brain. These cells are most probably liver cells carried to the brain by the circulation of the blood. It cannot be decided whether the untoward effects were caused by the direct toxic action of the sulfonamides or whether they were due to an idiosyncrasy, to a disturbance in the metabolism, to an acquired hypersensitivity subsequent to the preceding sulfonamide therapy or to an especial susceptibility caused by lupus. Since administration of sulfonamides to patients with lupus erythematosus or in this disease associated with arthritis and rheumatic fever has frequently turned out to be dangerous (Fisher), the greatest caution is necessary when administering sulfonamides.

Medicine, Baltimore

22:287-424 (Dec.) 1943

The Iris: Innervation of Iris of Albino Rabbit as Related to Its Function: Theoretical Discussion of Abnormalities of Pupils Observed in Man. O. R. Langworthy and L. Ortega.—p. 287.
Cold Hemagglutination: An Interpretative Review. D. Stats and L. R. Wasserman.—p. 363.

Ohio State Medical Journal, Columbus

40:1-100 (Jan.) 1944

Role of Emergency Medical Service in Gas Defense. W. P. Dearing.—p. 17.
Country Doctor Diagnoses a Family. P. S. Craig.—p. 22.
Meningococcic Adrenal Purpura in Adults. H. E. Simmel.—p. 23.
Management of Magnetic Foreign Bodies in Eye. P. G. Moore.—p. 26.
Irritation of Nasal Mucosa in Industry. F. W. Dixon.—p. 36.
Maxillofacial Injuries. C. J. Streicher and R. S. Rosedale.—p. 38.
Foreign Body in Bronchus with Pneumothorax Occurring in Opposite Side of Chest. R. S. Rosedale and J. M. Harkey.—p. 41.
Human Ovulation. K. Hale.—p. 45.
Thrombocytopenia Purpura Associated with Exophthalmic Goiter: Review of Available Literature and Case Report. S. D. Conklin and P. J. Shank.—p. 47.
Dolorimetry: Quantitative Method of Measuring Pain and Deep Sensibility. L. J. B. Gluzek.—p. 49.

Public Health Reports, Washington, D. C.

58:1881-1908 (Dec. 24) 1943

Use of Curtain Walls in Ratproofing. R. Porges.—p. 1881.
Sickness Absenteeism Among Industrial Workers, Second Quarter of 1943, with Note on Occurrence of Respiratory Diseases, 1934-1943. W. M. Gafafer.—p. 1885.
Benefits Accruing from Ratproof Construction of Vessels. G. C. Sherrard—p. 1888.

58:1909-1940 (Dec. 31) 1943

Survey of Statistical Studies on Prevalence and Incidence of Mental Disorder in Sample Populations. P. Lemkau, C. Tietze and Marcia Cooper.—p. 1909.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

24:171-226 (Oct.) 1943

*Studies on Experimental Goiter: IV. Effect of Di-Iodotyrosine and Thyroxine on Goitrogenic Action of Brassica Seeds. H. D. Purves. —p. 171.
Id: V. Pituitary Function in Relation to Goitrogenesis and Thyroidectomy. W. E. Griesbach and H. D. Purves.—p. 174.
Assay of Thyrotropic Activity by Cell Height Response in Guinea Pigs. W. E. Griesbach and H. D. Purves.—p. 185.
Basal Metabolism of Albino Rat Fed on Goitrogenic Diet. V. I. E. Whitehead.—p. 192.
Enzymes of Healing Wounds: I. Distribution of Alkaline Phosphomonoesterase in Experimental Wounds and Burns in Rat. H. B. Fell and J. F. Danielli.—p. 196.
Nutritional Studies of Bacterial Variation: I. Resistance to Pantoyltaurine in Naturally Occurring and Experimentally Prepared Strains. H. McIlwain.—p. 203.
Id.: II. Derivation of Drug Resistant Strains in Absence of Any Inhibitor. H. McIlwain.—p. 212.
Criteria of Life and Death in Human Pus Cells. R. E. H. Simpson. —p. 218.
Influence of Cross Suckling on Incidence of Mammary Cancer in High and Low Cancer Strains of Mice. L. Dmochowski and W. E. Gye. —p. 223.

Effect of Di-Iodotyrosine and Thyroxine on Goitrogenic Action of Brassica Seeds.—Purves reports the effects of injections of di-iodotyrosine and of thyroxine on the goitrogenic action of Brassica seeds. Male rats weighing between 80 and 100 Gm. were placed on the rape seed diet. Concurrently they were given daily injections of the substance whose effect was to be tested. The author found that thyroxine in daily doses of 3 micrograms per hundred grams of body weight abolishes the thyroid hyperplasia induced by feeding rats on rape seed diet. Iodide and di-iodotyrosine are equally effective on the basis of iodine content in moderating the thyroid activating effect of the rape seed diet. They do not abolish the action even in large doses. The action of the positive goitrogenic agents can be explained by the hypothesis that they interfere with the synthesis of thyroxine by the thyroid cells.

British Medical Journal, London

2:737-772 (Dec. 11) 1943

Physics and the Surgeon. H. S. Souttar.—p. 737.
Human Response to Flying Stress. C. P. Symonds.—p. 740.
*Advantages of Disodium-Citrate-Glucose Mixture as Blood Preservative. J. F. Loutit and P. L. Mollison.—p. 744.
Progressive Cerebral Ischemia. T. H. Howell.—p. 746.
Congenital Absence of Vagina Treated Successfully by Baldwin Technic. T. O'Neill.—p. 746.

Disodium Citrate Dextrose Mixture as Blood Preservative.—Loutit and Mollison show that a mixture of 100 cc. of 2 per cent disodium citrate with 20 cc. of 15 per cent dextrose (to be added to 420 to 430 cc. of blood) has two advantages over the present standard trisodium citrate dextrose mixture as an anticoagulant and preservative solution for blood storage: 1. Its preservative power, judged by the survival in vivo of erythrocytes stored in the solution, is considerably superior. 2. The mixture can be autoclaved entire without the production of caramel. The mixture, however, contains less citrate radical than the standard trisodium citrate solution, and greater care must be taken to secure thorough mixing of blood and solution if clot formation is to be avoided.

Edinburgh Medical Journal

50:661-704 (Nov.) 1943

Electrical Convulsion Therapy: Survey of Technic with Results in 260 Cases of Mental Disorder. D. K. Henderson, H. Tod and B. G. Daly.—p. 641.
*Ureteritis: Clinical Survey Based on 147 Cases. D. M. Morison. —p. 661.
Epidemic of Relapsing Fever in Edinburgh in 1843. E. D. W. Greig. —p. 681.

Ureteritis.—According to Morison the term ureteritis designates a lesion of the ureter which is not fully understood. It is apparently due to a localized spasm of the ureter and is usually intermittent in character. The pain consequent on this spasm is sufficiently distressing to cause advice to be sought. The author discusses this condition on the basis of 147 cases. Irritability of a ureter may be referred to its entire length or to a zone which physiologically shows narrowings. Ureteral spasm occurring in these zones gives rise to pain which is referred to definite areas of the abdomen. Pain in the pelvo-ureteral zone will raise the suspicion of a probable renal source and suggest a urinary tract investigation. Pain due to ureteritis involving the ureteral node crossing the common iliac vessel, particularly on the right side, is frequently mistaken for a grumbling appendix. In the zone where the ureter is in close apposition to the broad ligament in the female and to the vas in the male it is apt to be involved with any inflammatory process which may be associated with these parts. It is the most frequently affected part of the ureter in the female, and the resulting pain tends to be aggravated during the menses. The transmural portion of the ureter is frequently involved with long-standing infection of the bladder, which becomes submucous and interstitial. Involvement of this zone gives rise to urinary frequency. The fact that the ureter may be the cause of intermittent attacks of abdominal pain is not sufficiently recognized. Some of these patients become a surgical problem, and, because of their importunities regarding continued attacks of pain, operative procedures are not infrequently undertaken in the hope of affording relief. With the temporary complete rest imposed by such operative procedures, these patients have freedom from their pain till convalescence is nearing completion, when the pain returns. A course of ureteral dilation, reinforced when indicated by short wave diathermy, has resulted in 70 per cent of cure or definite improvement. Treatment proved ineffective in 4.1 per cent.

Medical Journal of Australia, Sydney

2:413-432 (Nov. 20) 1943

Group Specific Substances in Pooled Human Serum. J. J. Graydon and E. F. Woods.—p. 413.
*Blackwater Fever. T. E. Wilson.—p. 414.
Reception of Wounded at Operating Section: Problems of Organization, Resuscitation and Immediate Disposal. T. H. Ackland.—p. 418.

Blackwater Fever.—Wilson reports the history of a man aged 33 who had had numerous attacks of malaria since his first attack twelve years ago. For the greater part of these twelve years he has taken 5 grains (0.32 Gm.) of quinine each night. Two years ago, because of a succession of severe attacks of malaria, he was given five daily intramuscular injections of quinine. During the past six years he has taken six courses of atabrine (one tablet three times a day for five days) at intervals of approximately one year. A course of atabrine twelve months ago was followed by a course of plasmochin. One week prior to his present hospitalization the man had a severe febrile attack and was given 1 Gm. of atabrine three times a day for five days. The day after completing this course he complained of vague, generalized abdominal pains and malaise. The next morning the abdominal pains were still present, the skin was slightly icteric and he noticed that his urine was black. The treatment consisted in alkalization of the urine, administration of sufficient fluids by mouth and by the intravenous route to maintain a urinary output of an average of 97 ounces (2,870 cc.) a day for the first five days, repeated blood transfusions and the temporary avoidance of antimalarial drugs. At the onset of the disease the sternal marrow picture was within normal limits, but within three days there was great hyperplasia of the marrow affecting the pronormoblasts and the more mature cells of the definitive normoblastic series. With the cessation of the hemolysis the marrow picture gradually returned to normal. The disappearance of the parasites from the peripheral blood in this case of blackwater fever was accompanied by their absence from the sternal marrow. Since this case of blackwater fever followed a course of atabrine, it is suggested that blackwater fever is due to a hypersensitivity, not to quinine, but to a by-product liberated from the parasites by an antimalarial drug.

Quarterly Journal of Medicine, Oxford

12:185-264 (Oct.) 1943

Industrial Toxicology. D. Hunter.—p. 185.

Book Notices

A. M. A. Interns' Manual. Issued Under the Direction and Supervision of the Council on Medical Education and Hospitals and the Council on Pharmacy and Chemistry of the American Medical Association. [Second edition.] Fabrikoid. Price, 60 cents. Pp. 217. Chicago: American Medical Association, 1943.

This volume has been prepared with the needs of the intern as a foremost consideration. It has been designed, therefore, to provide such information as will be most helpful to medical graduates in their first period of hospital training. Thus it includes valuable data in relation to laboratory procedures, common emergencies, treatment of acute poisoning, drug therapy, dietary management, physical therapeusis, internship organization, medical licensure and other special subjects.

In the first chapter the Council on Medical Education and Hospitals describes the types of internships acceptable to the American Medical Association, the training and experience that should be obtained, the mutual obligations and relationships of hospitals and interns, the recording of educational services in the biographic files of the American Medical Association, medical licensure requirements and present standards for specialty training and certification. As further aid, particularly in relation to subsequent appointments, information has been included regarding federal, state and county services, public health, teaching opportunities, research, industrial practice and other medical assignments.

The section on Drug Administration and Materia Medica will be welcomed by all who wish to prescribe in a thoughtful and scientific manner. To this end the Council on Pharmacy and Chemistry has supplied full directions regarding methods of administration, dosage, prescription writing, equivalent weights and measures, and tables of solubilities. In addition, there is an extensive list of fifty pages giving the names, uses and dosage of all items included in the thirteenth edition of Useful Drugs. These have been conveniently arranged in alphabetical order.

The Council on Foods and Nutrition has contributed valuable tables and data on diets and nutrition. Similarly the Council on Physical Therapy has presented a section on physical agents that will give the interns a clearer understanding of the utilization of heat therapy, massage, therapeutic exercise, radiant energy, hydrotherapy, fever therapy and the application of low frequency currents. The legal aspects of internships have been carefully interpreted by the Bureau of Legal Medicine and Legislation of the American Medical Association. Its report on the lawful scope of intern practice should be of interest not only to interns and resident physicians but also to hospital administrators and members of intern committees. The book closes with a description of the various bodies which comprise the American Medical Association so that the reader may become thoroughly familiar with the functions and services of the organization.

The present manual is of convenient size, durable and attractively bound. It may be used either independently or as a supplemental reference in connection with established hospital rules and formularies. Its usefulness will not cease with the completion of the internship, for this handbook will continue to serve as a valuable source of reference in later periods of residency training and practice.

Notes for the R. M. O. of an Infantry Unit. By C. P. Blacker, M.C., M.A., M.D. Oxford War Manuals. General Editor: Lord Horder, G.C.V.O. Cloth. Price, $1.50. Pp. 77. New York & London: Oxford University Press, 1943.

An excellent summary of the many and varied duties of a regimental medical officer or a regimental surgeon, as he is called in our army, is contained in the book by Dr. C. P. Blacker. In the preface the author revealed that his background consisted of combat experience as an infantry officer in World War I and three years' service as a regimental medical officer in the same organization in World War II. No attempt is made to describe official procedures or duties, but a wealth of practical and pertinent information is found in all sections of the book. It is especially recommended to the young medical officer who has just completed his medical courses and is about to enter the service. The average American might find a slightly different terminology and the use of abbreviations, a common feature of British medical military literature, a little disconcerting at first. However, Dr. Blacker attempts to overcome these difficulties by clarity of description and the addition of the full name in parenthesis after an abbreviation is first used. On the whole it is a sound and practical guide to medical officers, both British and American.

In Divided and Distinguished Worlds: Religion and Rhetoric in the Writings of Sir Thomas Browne. By Dewey Kiper Ziegler. Cloth. Price, $2. Pp. 104. Cambridge, Mass.: Harvard University Printing Office, 1943.

This essay is a careful analysis of the "Religio Medici" of Sir Thomas Browne. It was written by its author as an essay required of undergraduate candidates for honors degrees. He has made a thorough study of the work which was the favorite of Sir William Osler, and his analysis of the rhetoric and science shows extraordinary insight. Ziegler concludes that Sir Thomas Browne strictly divided the spheres of religion and science, as, incidentally, Pasteur did many years later. Of religion Browne demanded only imaginative satisfaction. His "Religio Medici," though it fails as a philosophy, is a magnificent demonstration of the use of language for emotional, intellectual and sensuous enjoyment.

Kaiser Wakes the Doctors. By Paul De Kruif. Cloth. Price, $2. Pp. 158. New York: Harcourt, Brace & Company, 1943.

A favorite indoor sport among physicians today is the "panning" of Paul de Kruif, whose enthusiasms frequently eclipse his judgment and perhaps sometimes even his powers of observation. His current enthusiasm is the system of medical care established by Henry Kaiser for the workers in his shipbuilding plants. At least two medical writers, Drs. George H. Kress in *California and Western Medicine* and Floyd T. Romberger in the *Journal of the Indiana State Medical Association* have meticulously picked this book to pieces and left of it little of virtue. Those readers who think it worth while may refer to these contributions to confirm the opinion that the book is more propaganda than qualified sociological or medical study.

The Biochemistry of Malignant Tumors. By Kurt Stern, M.D., and Robert Willheim, M.D., Professor, University of Philippines, Manila. Cloth. Price, $12. Pp. 951. Brooklyn: Chemical Publishing Company, Inc.; Reference Press, 1943.

This book reviews the literature of biochemical research in the field of cancer to the end of 1941. It is an enlarged continuation of the book on the same subject published by the same authors in Vienna in 1936. The chapter captions will indicate the nature and scope of the contents: inorganic chemistry, organic chemistry, physical chemistry, enzymes, nutrition and vitamins, metabolism, endocrines, immunology, tumor origin and growth, tumor diagnosis. An enormous amount of material is reviewed. Thus the number of names in the author index is about 3,500. The work appears to have been well done. The book will facilitate a study of the literature of the biochemistry of cancer.

The Case of a A. L———, Aged 56: Some Curious Medical Aspects of Lincoln's Death and Other Studies. By Otto Eisenschiml. Cloth. Price, $3.50. Pp. 55, with 3 illustrations. Chicago: Abraham Lincoln Book Shop, 1943.

In a small well written booklet Dr. Eisenschiml carefully analyzes the fatal gunshot wound of President Lincoln. Every detail of the medical aspects of the assassination is reviewed, such as the exact position of President Lincoln and John Wilkes Booth at the time of the shooting, the probable path of the missile through Lincoln's brain, the medical and nursing care given to Lincoln after the shooting, and the varied postmortem reports. The addition of the last chapter entitled "If Lincoln Had Lived," though an intriguing historical speculation, detracts from an otherwise scientific treatise.

Metabolism Manual. By Jessie K. Lex, R.T., M.T., Chief Medical Technologist, the Parker Diagnostic Clinic, Peoria, Illinois. Cloth. Price, $1.75. Pp. 56, with illustrations. Peoria: Metabolism Department, Parker Diagnostic Clinic, 1943.

This misnamed monograph actually deals with the technic and interpretation of the basal metabolism test as performed with an apparatus of the Roth-Benedict type. It is intended to instruct the technician in handling both the apparatus and the patient, and in distinguishing between a reliable and a faulty test. It is clear that the authoress is a well trained and conscientious technician. But the material is incomplete and not well presented. The style is pompous and prolix.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

SYSTEMIC DISEASE AND FERTILITY

To the Editor:—**In May 1943 a patient had a sudden onset of gross hematuria while apparently in good health. He is 25 years old and has no history of kidney disease. Repeated ureteral catheterization showed the hematuria to be bilateral. Kidney function was unimpaired; blood pressure stayed at its old level of 126/82; there was no anasarca or significant drop in plasma proteins. After four months, two of which were spent in bed, the hematuria cleared, but the albuminuria persists in some degree to the present. The diagnosis, arrived at after some hesitation, was acute glomerulonephritis, now in the subacute stage. The nonprotein nitrogen incidentally was never elevated, and the sedimentation rate was normal throughout. The red blood cell count dropped from 5.3 million to 4.5 million, but the white blood cell count remained the same. He never had any temperature rise. He and his wife have been trying to conceive for the last six months without success. His sperm count is about 17.5 million per cubic centimeter and the sperm seem actively motile, with good progress across the field. There are fewer than 5 per cent abnormal forms. His ejaculate contains about 2.5 cc. The Huhner test is positive for living, motile sperm after three hours. Before beginning investigation of the wife, I should like to ask whether the patient's nephritis would have any effect on his ability to conceive. Could you give me any references in the literature to the effect of systemic disease on sperm formation and conception? Is anything known about the likelihood for abnormality in the fetus in such cases?**

M.D., New York.

ANSWER.—Stock breeders have long recognized the depressing effect of systemic disorders on the fertility of their flocks, droves and herds. In recent years much evidence of a similar phenomenon in human beings has accumulated. Constitutional ailments are frequently correlated with poor semen, which improves when the former are corrected (Meaker, S. R., and Vose, S. N.: The Nature of Human Infertility, THE JOURNAL, Oct. 26, 1940, p. 1426). The treatment of such conditions in either sex is followed by pregnancy often enough to make a cause and effect relationship highly probable.

In these cases the first pregnancy not uncommonly terminates in abortion. Such an event signifies that the fertility level has been raised above the threshold of conception but is not yet high enough to endow the fertilized ovum with that degree of vitality necessary for its continued growth. The result is early ovular death rather than the development of a monster. Mall states categorically that all monstrosities are due to faulty implantation and not to imperfections inherent in the ovum.

The constitutional disorders known to depress fertility include the entire group of endocrine underfunctions, most often those of the anterior pituitary and the thyroid; chronic poisonings, notably toxic absorption from foci of infection; faults of diet and hygiene, and conditions leading to general debility. It is conceivable that acute glomerulonephritis might fall into this last category, but no observations as to its effect on fertility have been recorded.

The majority of highly fertile men show sperm counts of 100 million or better. Evaluations of morphology vary according to the standards of the individual examiner, but all experienced workers agree that even the best specimens contain around 15 per cent of immature or otherwise imperfect forms.

Another specimen of semen should be examined when the patient has entirely recovered from the effects of his illness. If this is not found to be satisfactory as to numbers, morphology, motility and endurance of the spermatozoa, further study of the case will be indicated, with special reference to endocrine factors.

"SENILE WARTS" REQUIRE INVESTIGATION

To the Editor:—**Many elderly persons are distressed and disfigured by "senile warts." Is there any satisfactory "wholesale" treatment for this condition. Must they be attacked and remedied individually?**

Ursula G. Mandel, M.D., Los Angeles.

ANSWER.—Senile warts are not warts in the strict sense. The term is usually applied to what are either senile keratoses or seborrheic keratoses. There is a great deal of confusion in the literature about these diseases. Eller and Ryan (Senile Keratoses and Seborrheic Keratoses, *Arch. Dermat. & Syph.* **22**:1043 [Dec.] 1930) have presented a clear differentiation between them, and the discussion that followed their paper is illuminating. Both forms are local growths not amenable, as far as is known, to any general treatment. The important point brought out by the paper cited is that, on the face especially, less often on the neck or trunk, lesions that appear clinically to be seborrheic keratoses sometimes prove on microscopic investigation to be senile keratoses. They are therefore potentially dangerous growths masquerading as comparatively innocent ones. Efficient treatment of either form requires an investigation to determine whether epitheliomatous degeneration has begun under the surface tumor.

OPTIC MANIFESTATIONS ASSOCIATED WITH MALARIA OR CINCHONISM

To the Editor:—**What is the etiology and mechanism of production of the exudative papillitis found in recurrent malaria? Is it due to the malaria, to the quinine or to the atabrine? A sufficient number of visual field changes in patients with recurrent malaria (five or more attacks), generally with varying amounts of internal antimalarial medication, have occurred to make these studies of importance. The classic retinal picture in cinchonism is, of course, contracted retinal arteries, pallid retina and contracted fields (Duke-Elder, vol. 3, p. 3032). Goodman and Gilman (The Pharmacological Basis of Therapeutics) concur (1940 ed., p. 910) but on page 907 (cardiovascular system) indicate that vasodilatation is part of the toxicology. What are the true cause and mechanism of the exudative vasculitis of the disk?**

Major, M. C., A. U. S.

ANSWER.—It is impossible in the present state of our knowledge to give a categorical answer to these questions. It is generally accepted that, in cinchonism, the optic disk is pale and the retinal arterioles are constricted. It is not definitely known, however, whether the loss of vision is the result of primary ischemia of the retina or whether it is due to direct toxic action of quinine on the ganglion cells of the retina. The vasodilating action of quinine seems to be a selective one affecting particularly the vessels in the skin and in the extremities. Advanced degrees of vasodilatation are associated in the main only with toxic doses of the drug. No specific toxic effects have been noted with the use of atabrine in accepted dosage or even after considerably larger doses than are prescribed ordinarily. Certain psychotic manifestations have been ascribed to the staining of the brain similar to that which occurs in the skin.

It must be assumed, therefore, that the lesions noted in the optic nerve and retina and presumably the changes in the visual fields are associated with the malaria and not with the medication. The exact mechanism of the production of these lesions is not so clear, however. With falciparum infections, in cases of malignant malaria, the capillaries, including those in the retina, choroid and brain, are filled with red cells containing the plasmodia, and neighboring tissue lesions can result either from a direct toxic action or from actual thromboses of vessels. With vivax infections, however, this packing of the capillaries does not occur, apparently. Lesions developing in the retina and choroid during an acute febrile stage of vivax malaria must be assumed, then, to be the result of the general toxemia and to be similar to those found in association with other febrile diseases such as pneumonia or influenza. It must be borne in mind, however, that most patients with recurrent malaria are anemic, cachetic and undernourished. Some of the hemorrhages in the retina, the lesions of the optic nerve and the changes in the fields of vision may then be due to the associated anemia, malnutrition and avitaminosis rather than to the malaria infection itself. Further study on these points is definitely indicated.

EXOSTOSIS OF AUDITORY CANAL

To the Editor:—**At the age of 47 I suddenly find that I have an exostosis of the ear canals. There is no history of any ear disease other than a mild fungous infection several years ago. When examined at that time no mention was made of an existing exostosis. Is exostosis of the ear canal a congenital disease?**

Lieutenant Commander, U.S.N.R.

ANSWER.—By exostosis is meant a circumscribed bony growth of the external auditory canal as distinguished from the flatter, broader and more diffuse form which goes by the name of hyperostosis. As Politzer says, one is seldom in a position to observe clinically the growth of these exostoses, as they are not accompanied by inflammatory phenomena. Symmetrical multiple bilateral exostoses are probably hereditary in origin and are thought to be as a rule true bony tumors. Some solitary growths may resemble externally true bony tumors but are thought by many to arise in part, at least, from ossification of chondromas or hyperplastic periostitic areas caused by minor traumas and irritations.

If the original observation as mentioned was accurate and it is reasonably certain that no growth was present several years previously, then the condition present is surely not congenital but acquired. It is only fair to say that there is much about the origin and histologic structure of these growths which is obscure and indefinite. Dogmatic statements are hence undesirable.